T A B L E O F C O N T E N T S

AASHTO HS–20 LOADING AREAS

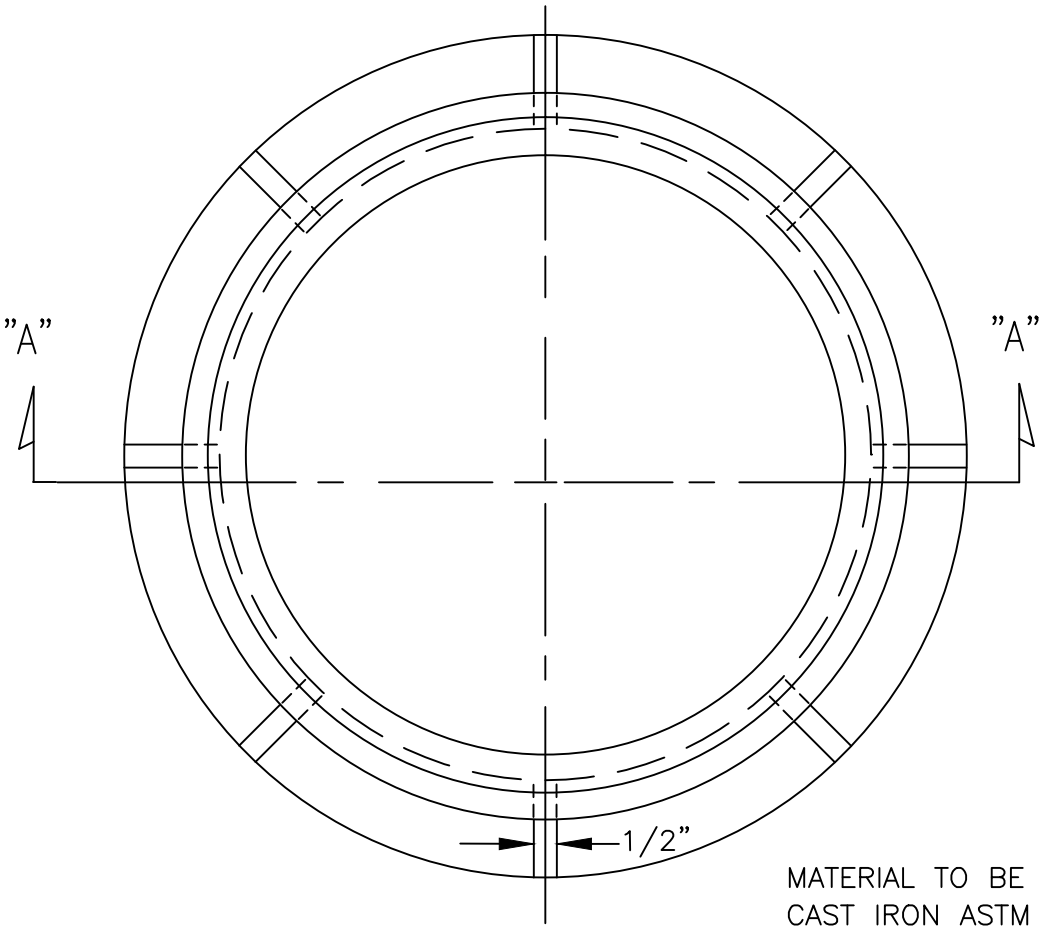
Size Inches	NON–REINFORCED		REINFORCED		
	C 14 Class 2	C 14 Class 3	C 76 Class III	C 76 Class IV	C 76 Class V
6	20.5	24.5	----	----	----
8	16.0	19.5	----	----	----
10	13.5	16.0	----	----	----
12	11.5	13.5	11.0	15.5	22.5
15	11.5	12.5	11.5	16.0	23.0
18	11.5	12.5	12.0	16.5	23.5
21	10.5	13.0	12.0	17.0	24.5
24	10.5	13.5	12.5	17.5	25.0
27	----	----	13.0	17.5	25.5
30	----	----	13.0	18.0	25.5
36	----	----	14.0	19.0	26.5
42	----	----	14.5	19.5	27.0
48	----	----	15.0	20.0	28.0
54	----	----	15.5	21.0	28.5
60	----	----	16.5	21.5	29.0
66	----	----	17.0	22.0	30.0
72	----	----	18.0	22.5	30.5
78	----	----	19.0	23.0	31.0
84	----	----	19.5	24.0	31.5
90	----	----	20.5	24.5	32.5
96	----	----	21.0	25.5	33.0
102	----	----	22.0	26.0	33.5
108	----	----	22.5	27.0	34.0
114	----	----	23.0	28.0	35.0
120	----	----	24.0	28.5	35.5

EARTH LOAD ONLY

Size Inches	NON–REINF. C 14 Class 2
6	20.5
8	16.0
10	13.5
12	11.5
15	11.5
18	11.5
21	11.5
24	11.5
27	----
30	----

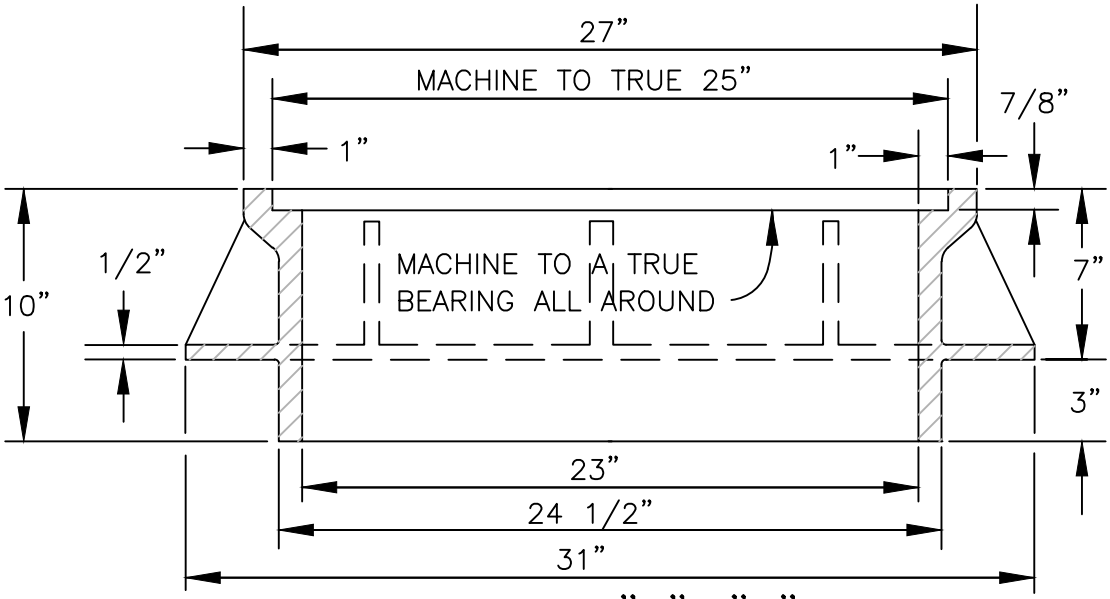
NOTES: Depths are for pipes with Class "B" pipe zone.
Depths are based upon a trench width of TRANSITION width or greater.
Depths are in feet to the invert of the pipe.
Pipe must conform to ASTM requirements.
Loads can be only backfill and AASHTO HS–20.
Minimum cover over pipe is 3.0 feet.
Compacted weight of backfill over pipe does not exceed 120 pcf.

DRAWN	AJH		COMMUNITY DEVELOPMENT	SCALE	N.T.S.
DIV.			CITY OF SCAPPOOSE	DATE	2002
REV.	DATE	APPR.	34485 E. COLUMBIA AVENUE, PO BOX "P", CITY OF SCAPPOOSE, OR. 97056	APPR.	
			CONCRETE PIPE ALLOWABLE INSTALLATION DEPTH	DWG. NO.	301



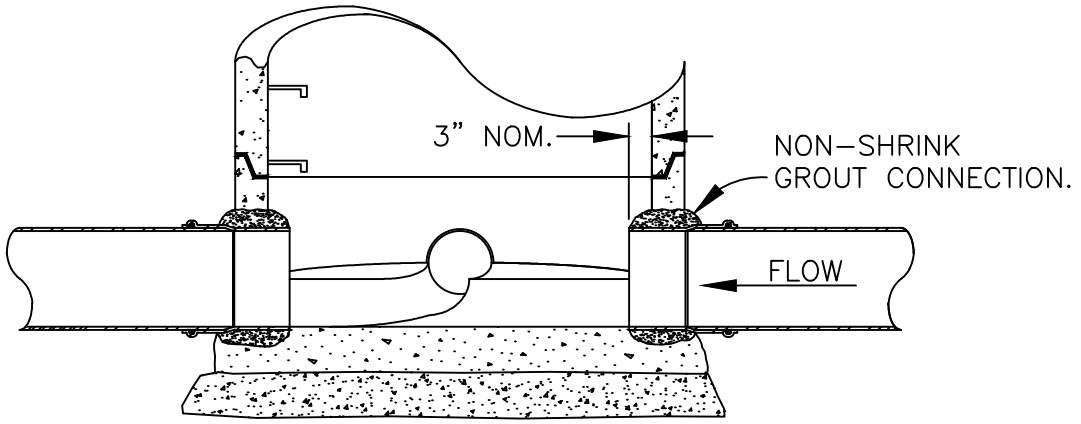
PLAN

MATERIAL TO BE GRAY CAST IRON ASTM A–48, CLASS 30.
WEIGHT = 237 LBS.

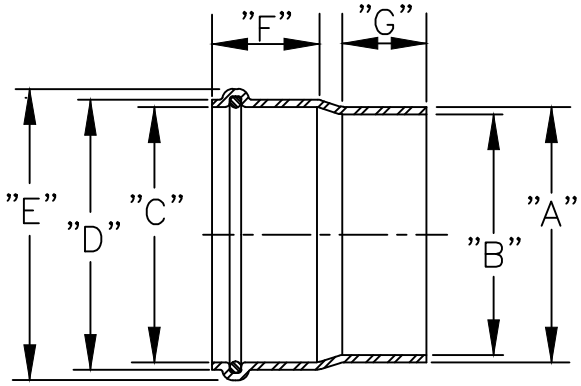


SECTION "A"–"A"

DRAWN	AJB		COMMUNITY DEVELOPMENT CITY OF SCAPPOOSE 34485 E. COLUMBIA AVENUE, PO BOX "P", CITY OF SCAPPOOSE, OR. 97056	SCALE N.T.S.
DIV.				DATE 2002
REV.	DATE	APPR.		APPR.
			INDUSTRIAL MANHOLE FRAME 7" DEPTH	DWG. NO. 302



MANHOLE INSTALLATION



SECTION THROUGH ADAPTER

ALL MATERIAL AND WORK SHALL COMPLY WITH CITY OF SCAPPOOSE STANDARD SPECIFICATIONS.

THE SAND COLLAR SHALL BE FABRICATED BY AN APPROVED MANUFACTURER AND NOT FIELD MADE.

THE NOMINAL PIPE SECTION (DIM. "G") SHALL BE COATED WITH AN EPOXY ADHESIVE COMPATIBLE WITH BOTH PVC AND CONCRETE GROUT AND COARSE AGGREGATE APPLIED.

SIZE	"A"	"B"	"C"	"D"	"E" *	"F" *	"G"
4"	4.22"	3.97"	4.25"	4.50"	5.20"	2.90"	7.00"
6"	6.28"	5.92"	6.32"	6.68"	7.50"	6.25"	7.00"
8"	8.40"	7.92"	8.46"	8.94"	10.10"	4.10"	7.00"
10"	10.50"	9.90"	10.57"	11.17"	12.40"	4.70"	7.00"
12"	12.50"	11.78"	12.58"	13.30"	14.50"	5.15"	7.00"
15"	15.30"	14.43"	15.36"	14.49"	18.00"	5.95"	7.00"
18"	18.70"	17.63"	18.76"	19.83"	21.98"	5.90"	7.00"
21"	22.05"	20.79"	22.11"	23.37"	25.63"	6.40"	7.00"
24"	24.80"	23.38"	25.04"	26.46"	28.80"	15.75"	7.00"
27"	27.95"	26.35"	28.27"	29.87"	32.50"	18.30"	7.00"
30"					35.00"		7.00"
36"					41.50"		7.00

* APPROXIMATE DIMENSION

ALL MATERIAL AND WORK SHALL COMPLY WITH CITY OF SCAPPOOSE STANDARD SPECIFICATIONS.

DRAWN: AJH		
DIV.		
REV.	DATE	APPR.

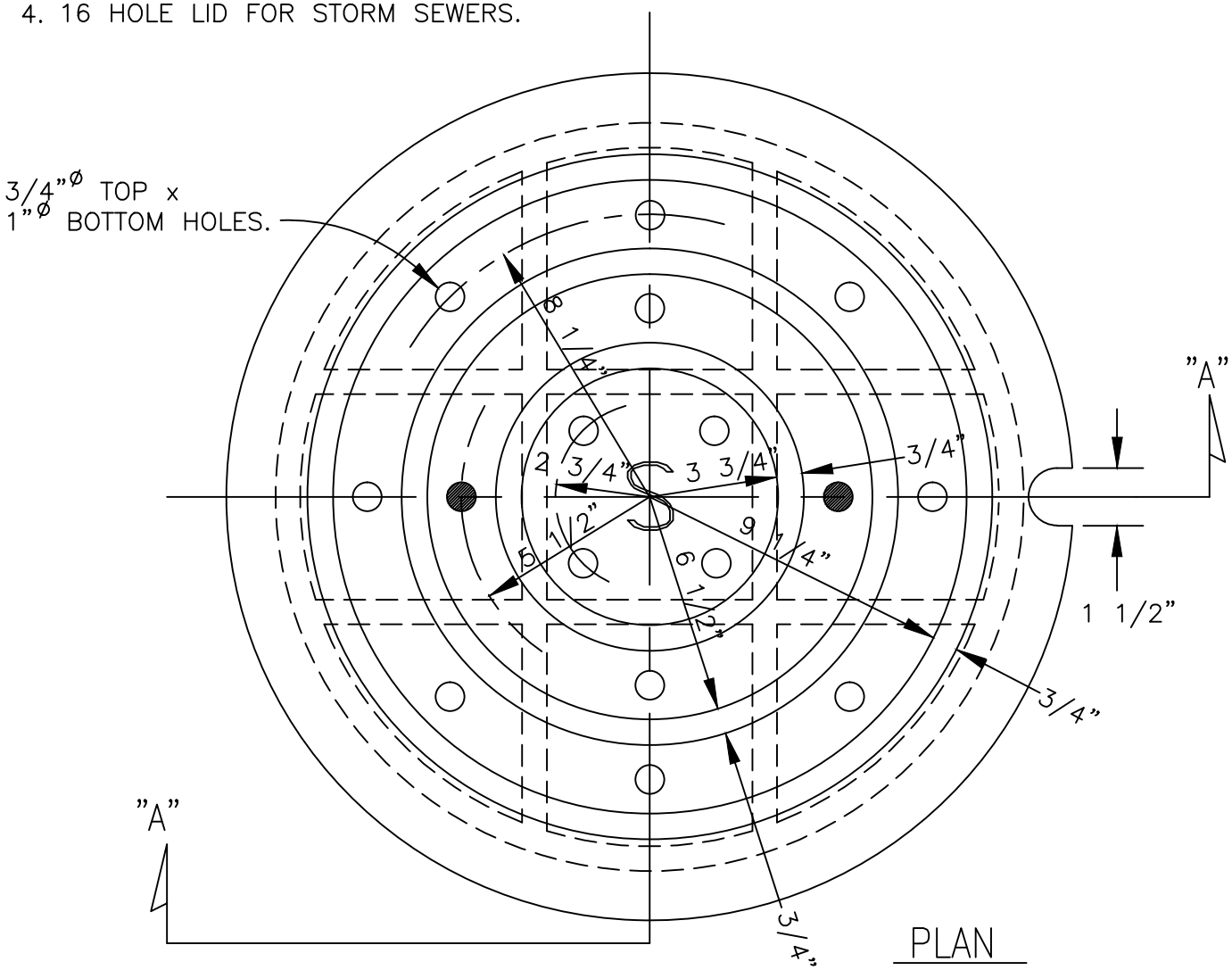
COMMUNITY DEVELOPMENT
CITY OF SCAPPOOSE
34485 E. COLUMBIA AVENUE, PO BOX "P", CITY OF SCAPPOOSE, OR. 97056

MANHOLE ADAPTER
(SAND COLLAR)

SCALE	N.T.S.
DATE	2002
APPR.	
DWG. NO.	303

NOTES:

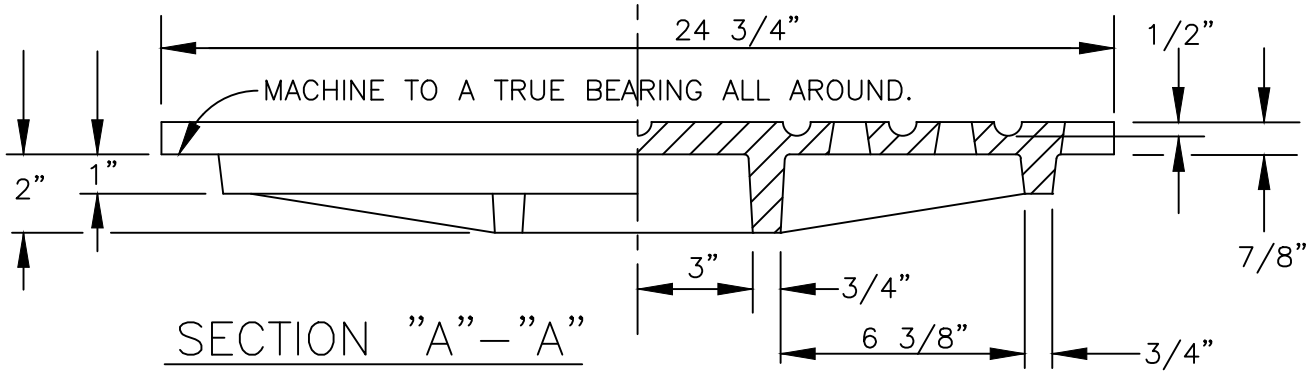
1. COVER AND FRAME TO BE MACHINED FOR TRUE BEARING.
2. MATERIAL SHALL BE GRAY CAST IRON, ASTM A-48, CLASS 30. Wt. = 139 lbs. +/-
3. TWO HOLE LID FOR SANITARY SEWERS.
4. 16 HOLE LID FOR STORM SEWERS.



PLAN

FOR SANITARY SEWERS ONLY (2) HOLES ARE USED AND SHOWN SHADED.
FOR STORM SEWERS ONLY (16) HOLES ARE USED AND SHOWN OPEN & SHADED.

THESE COVERS TO BE USED FOR IN-ROAD LOCATIONS ONLY.

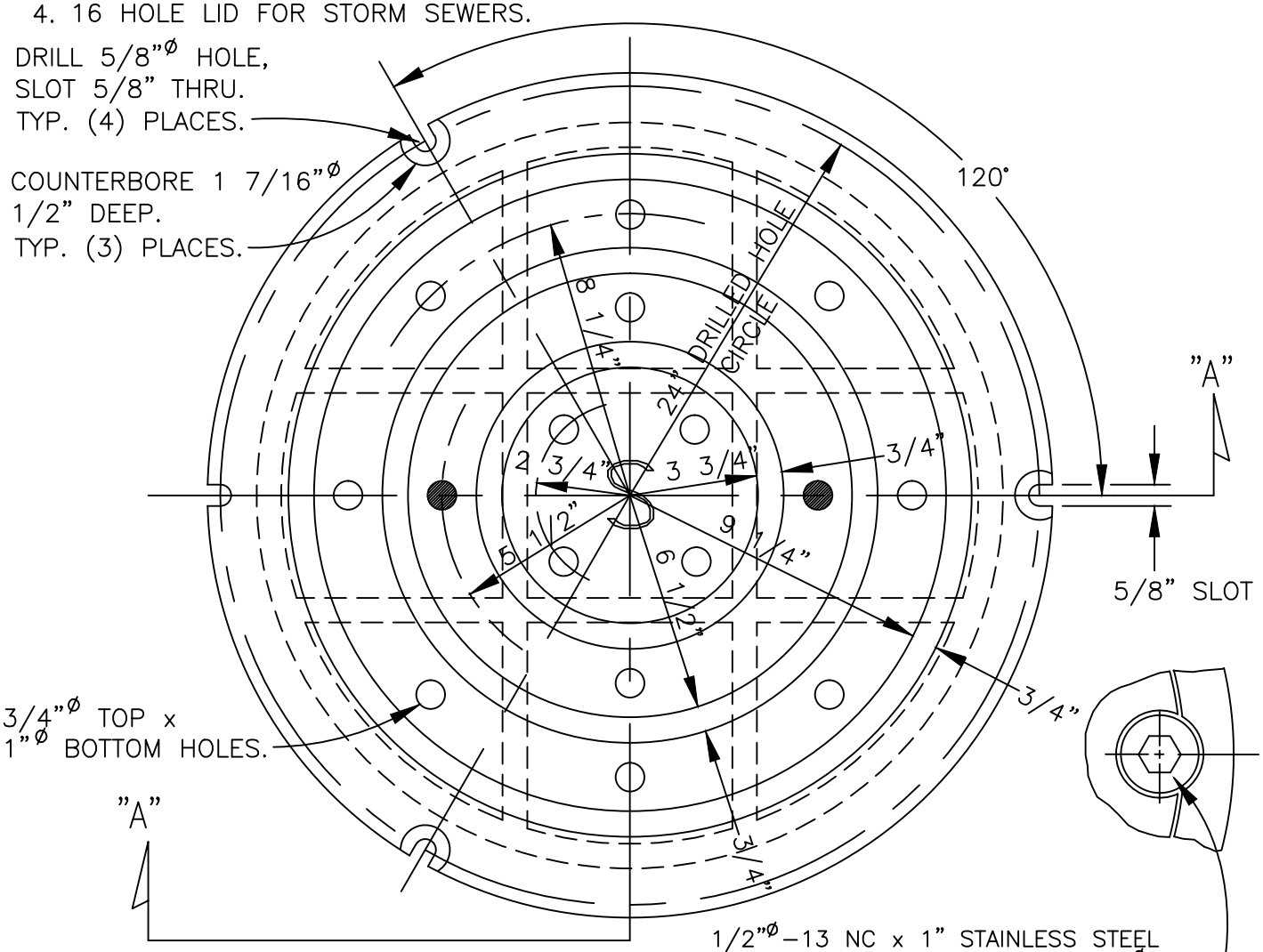


SECTION "A"-"A"

DRAWN	AJH		COMMUNITY DEVELOPMENT CITY OF SCAPPOOSE 34485 E. COLUMBIA AVENUE, PO BOX "P", CITY OF SCAPPOOSE, OR. 97056	SCALE	N.T.S.
DIV.				DATE	2002
REV.	DATE	APPR.		APPR.	
			SANITARY and STORM MANHOLE COVER	DWG. NO.	305

NOTES:

1. COVER AND FRAME TO BE MACHINED FOR TRUE BEARING.
2. MATERIAL SHALL BE GRAY CAST IRON, ASTM A-48, CLASS 30. Wt. = 139 lbs. +/-
3. TWO HOLE LID FOR SANITARY SEWERS.
4. 16 HOLE LID FOR STORM SEWERS.

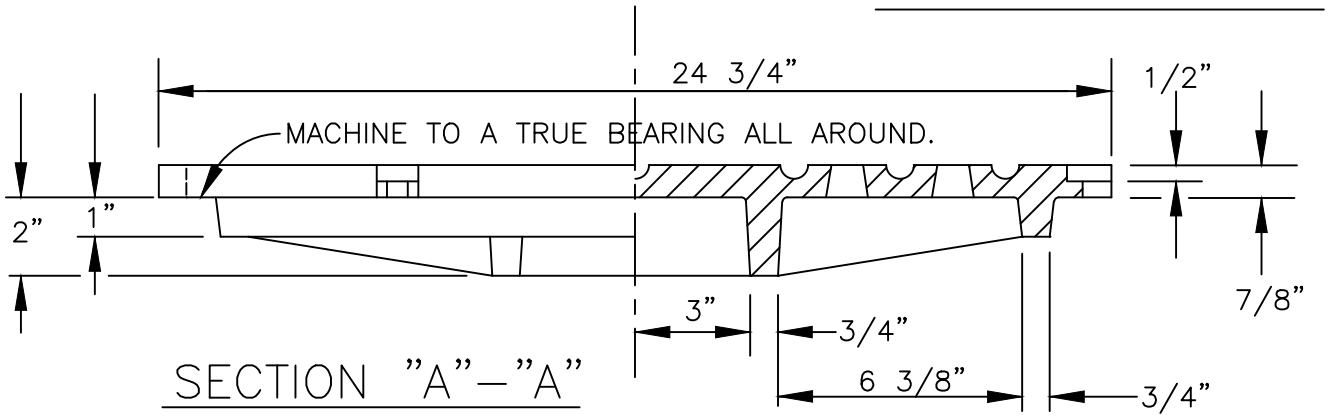


PLAN

SANITARY MANHOLE HOLES SHOWN SHADED.
SEE DWG. 305 FOR ADDITIONAL NOTES

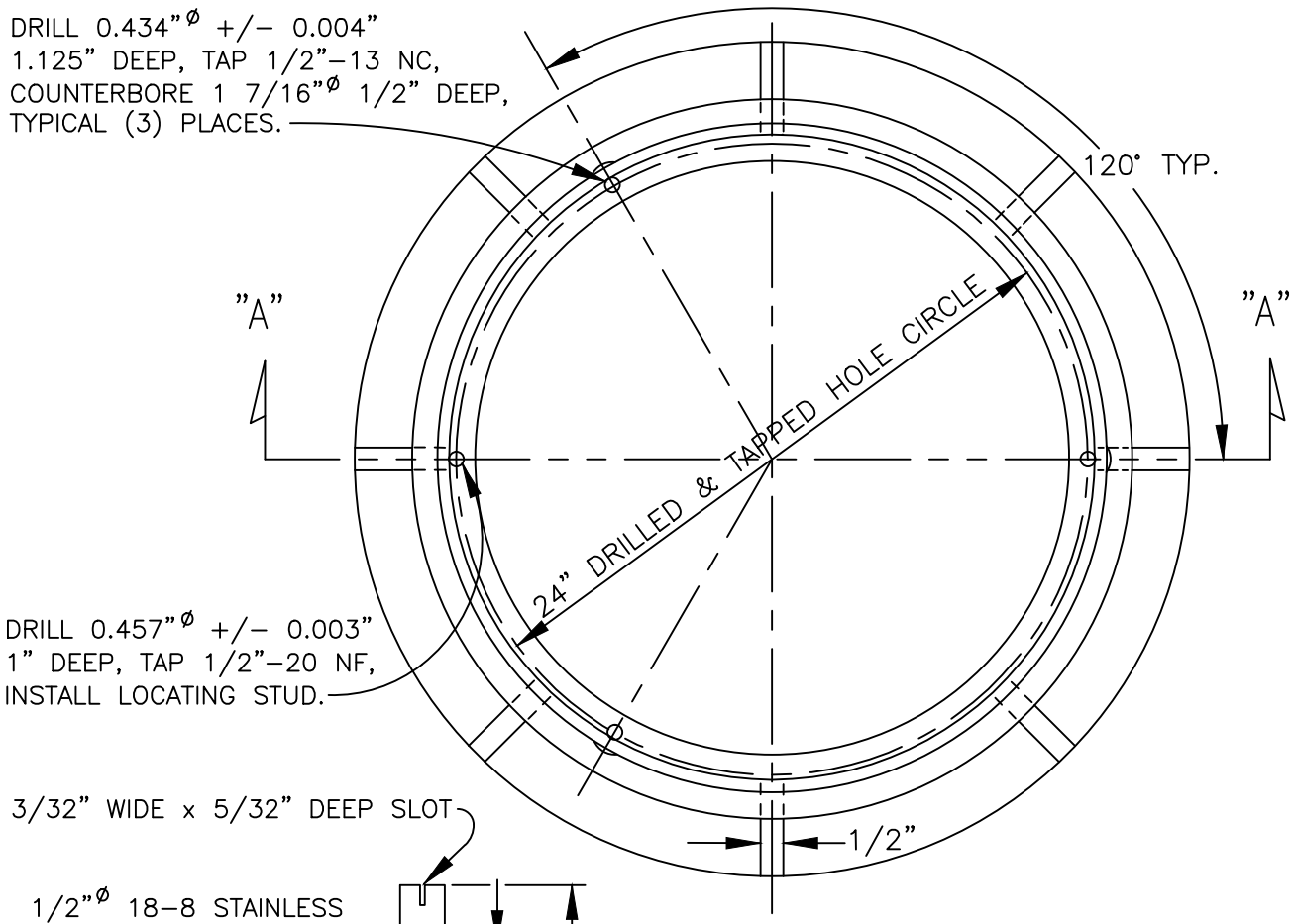
1/2"Ø-13 NC x 1" STAINLESS STEEL HEX HEAD CAP SCREW W/ 1 1/4"Ø OD x 3/32" THK. 8-18 STAINLESS STEEL WASHER. (3) EA. REQUIRED.

LOCKDOWN DETAIL

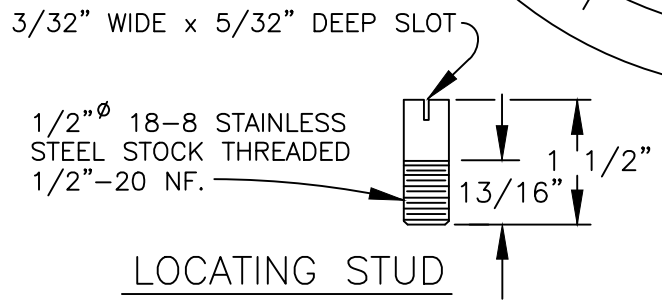


SECTION "A"-"A"

DRAWN	AJH		COMMUNITY DEVELOPMENT CITY OF SCAPPOOSE 34485 E. COLUMBIA AVENUE, PO BOX "P", CITY OF SCAPPOOSE, OR. 97056	SCALE N.T.S.
DIV.				DATE 2002
REV.	DATE	APPR.		APPR.
			SANITARY and STORM MANHOLE TAMPERPROOF COVER	DWG. NO. 306

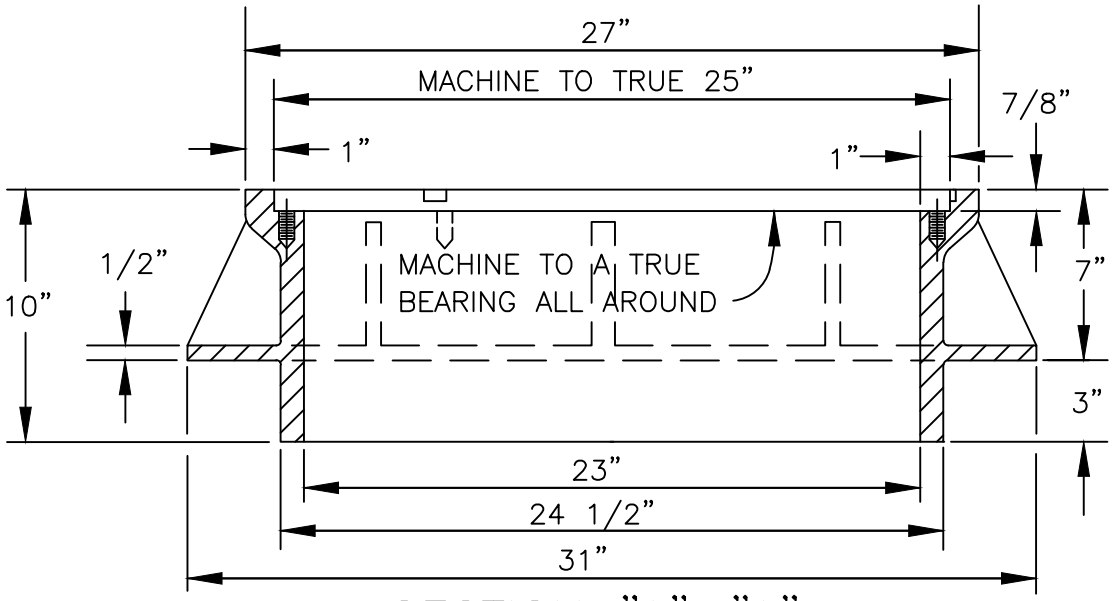


PLAN



LOCATING STUD

MATERIAL TO BE GRAY CAST IRON ASTM A-48, CLASS 30.
WEIGHT = 237 LBS.

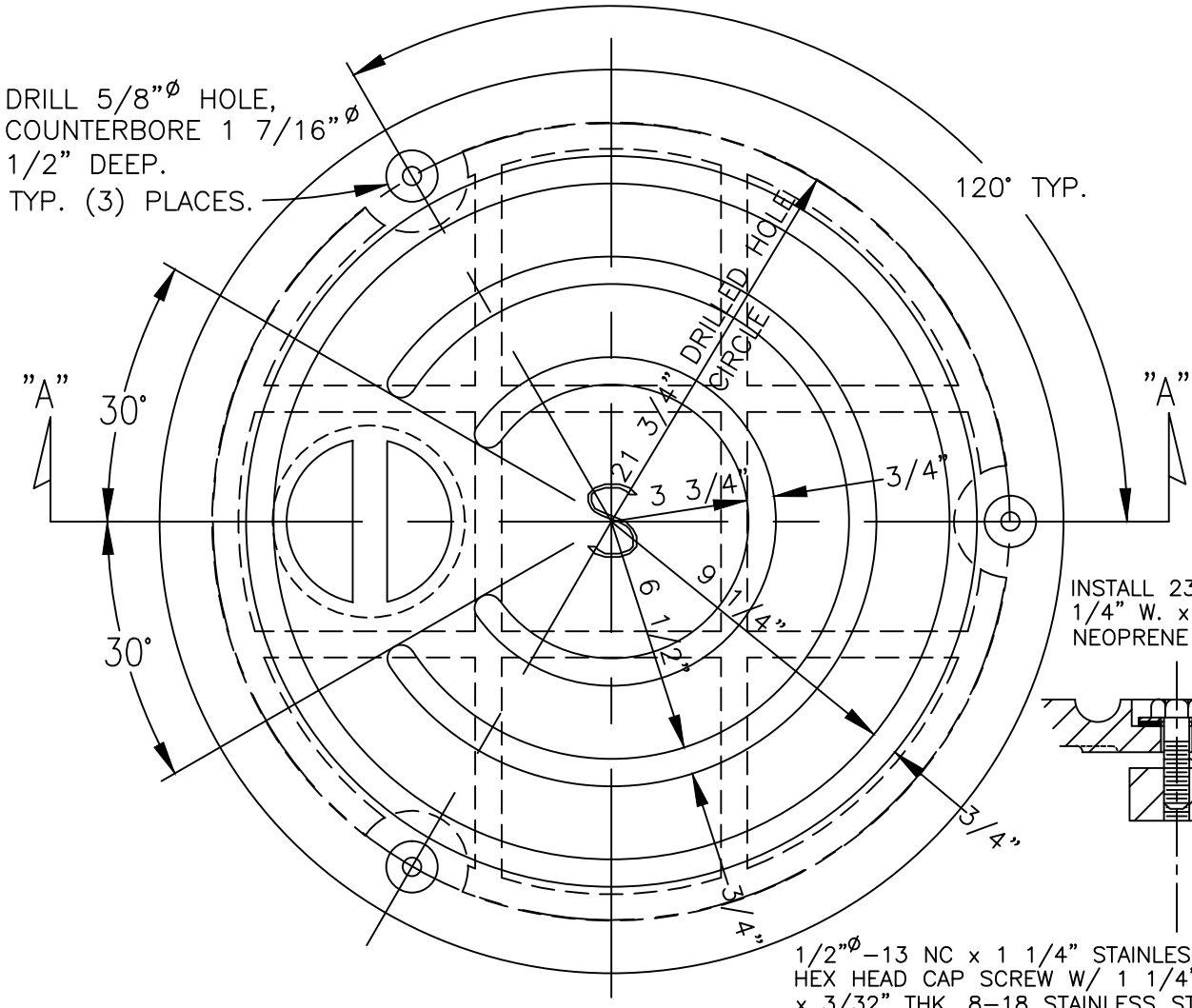


SECTION "A"-"A"

DRAWN	AJB		COMMUNITY DEVELOPMENT CITY OF SCAPPOOSE 34485 E. COLUMBIA AVENUE, PO BOX "P", CITY OF SCAPPOOSE, OR. 97056	SCALE	N.T.S.
DIV.				DATE	2002
REV.	DATE	APPR.		APPR.	
			SANITARY and STORM TAMPERPROOF MANHOLE FRAME	DWG. NO.	307

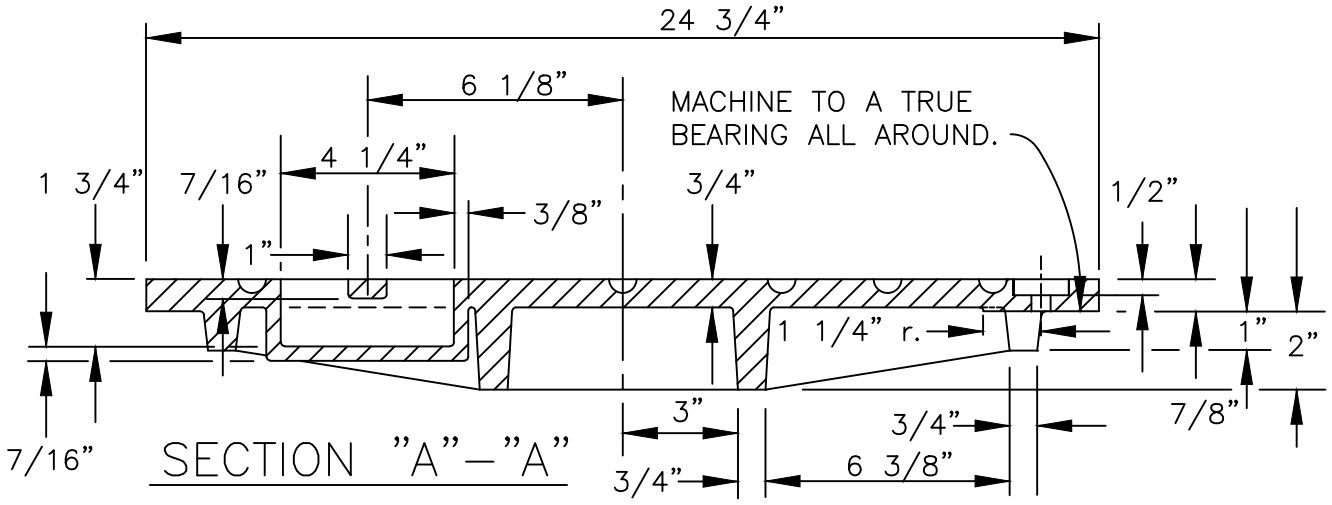
NOTES:

1. COVER AND FRAME TO BE MACHINED FOR TRUE BEARING.
2. MATERIAL SHALL BE GRAY CAST IRON, ASTM A–48, CLASS 30. Wt. = 139 lbs. +/–



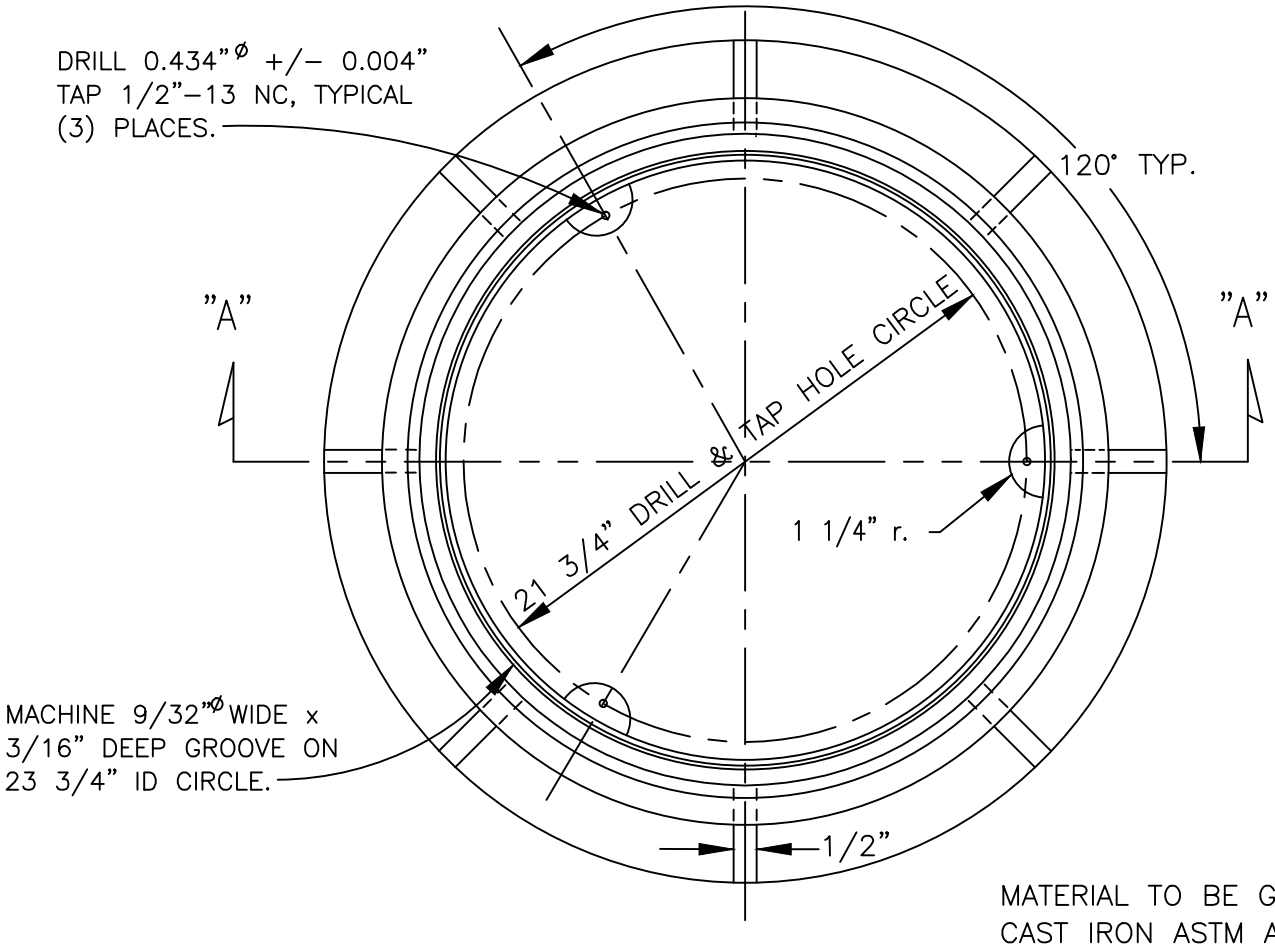
PLAN

LOCKDOWN DETAIL



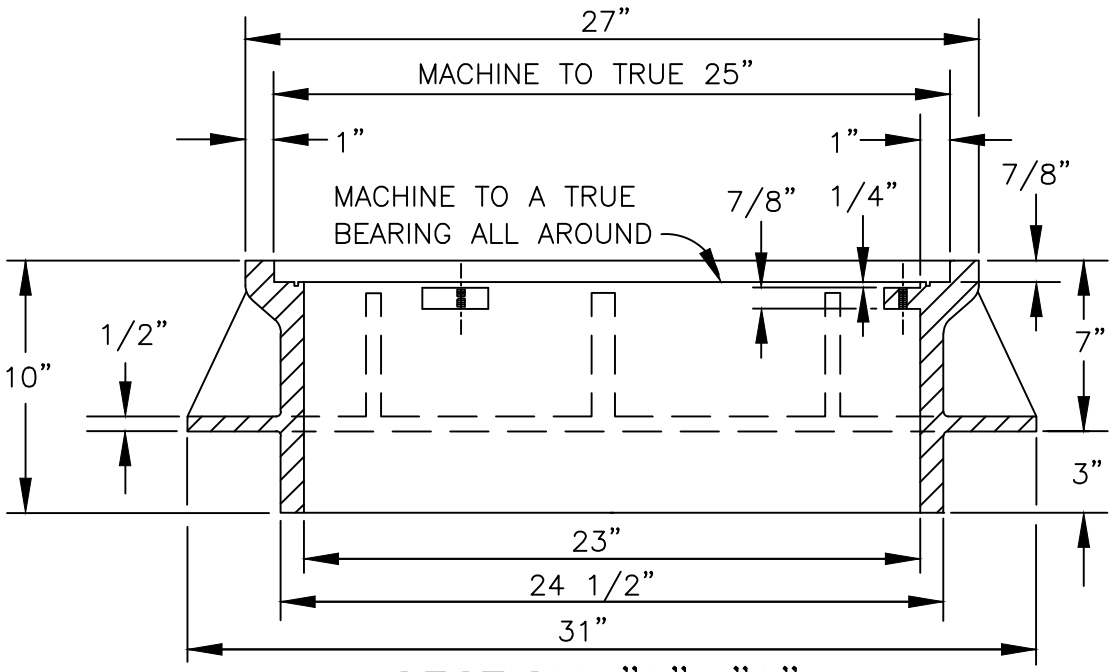
SECTION "A"–"A"

DRAWN	AJH		COMMUNITY DEVELOPMENT CITY OF SCAPPOOSE 34485 E. COLUMBIA AVENUE, PO BOX "P", CITY OF SCAPPOOSE, OR. 97056	SCALE N.T.S.
DIV.				DATE 2002
REV.	DATE	APPR.		APPR.
			SANITARY and STORM MANHOLE WATERPROOF COVER	DWG. NO. 308



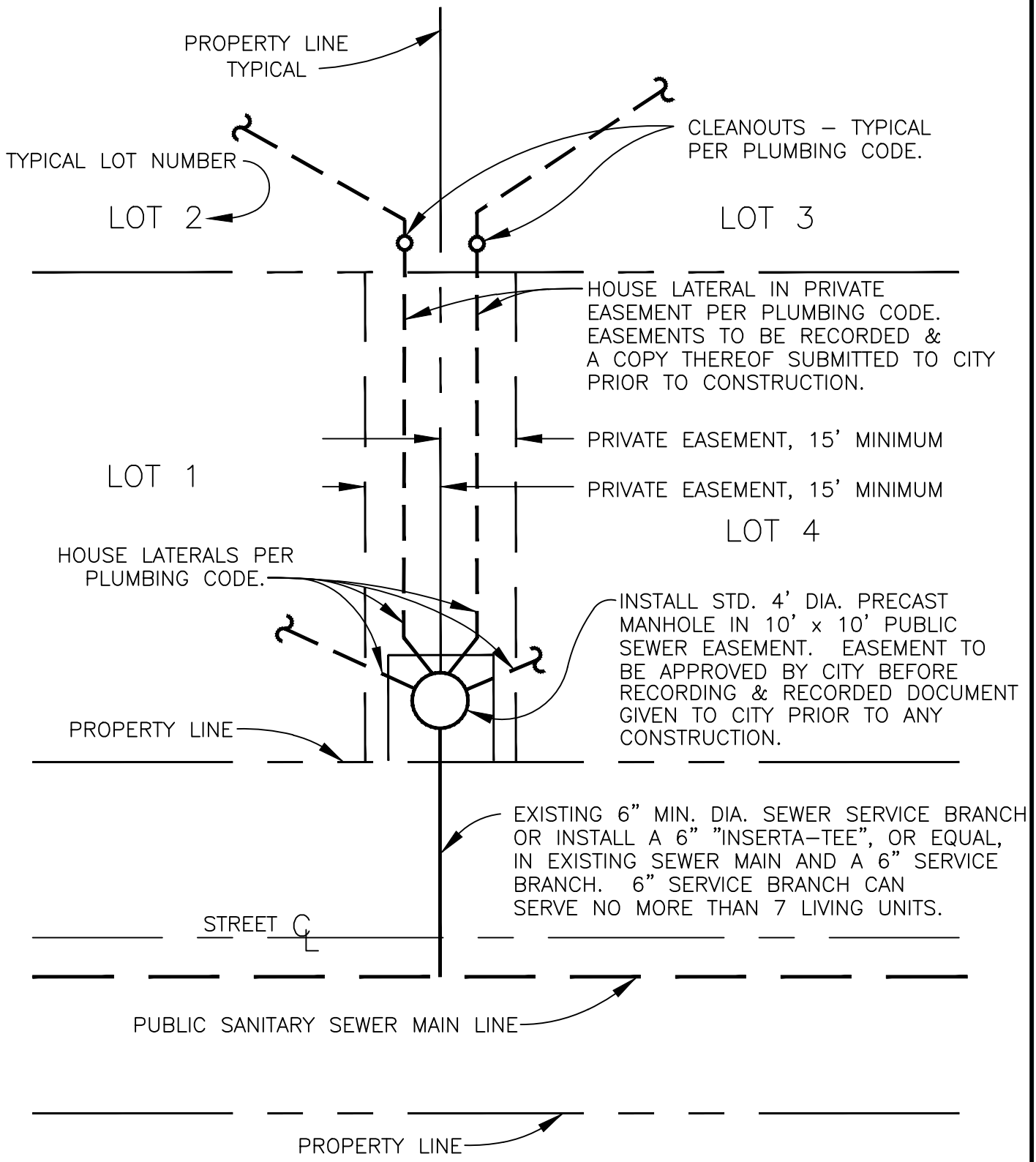
PLAN

MATERIAL TO BE GRAY CAST IRON ASTM A-48, CLASS 30.
WEIGHT = 237 LBS. +/-



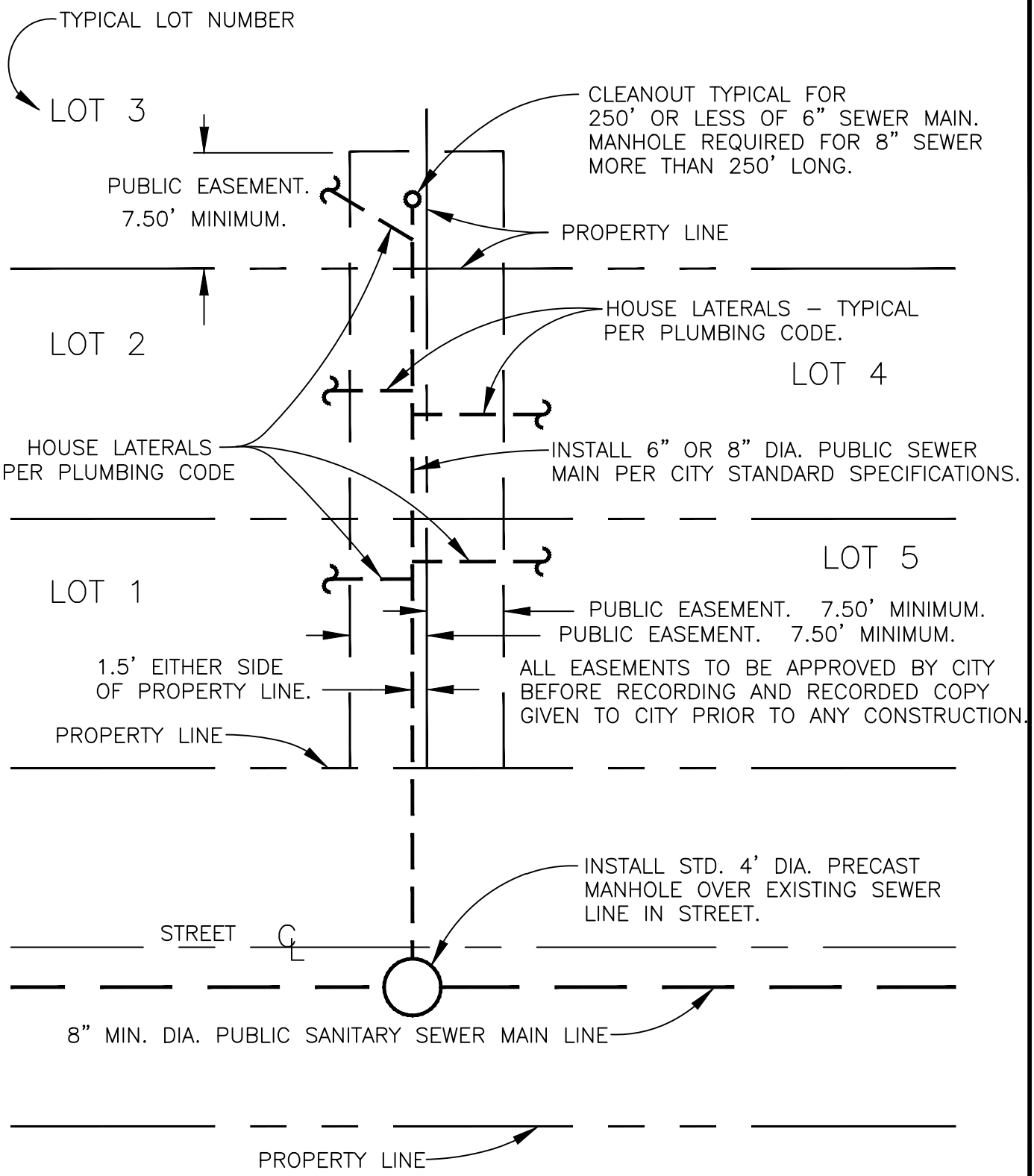
SECTION "A"-"A"

DRAWN	AJH		COMMUNITY DEVELOPMENT CITY OF SCAPPOOSE 34485 E. COLUMBIA AVENUE, PO BOX "P", CITY OF SCAPPOOSE, OR. 97056	SCALE N.T.S.
DIV.				DATE 2002
REV.	DATE	APPR.		APPR.
			SANITARY and STORM WATERPROOF MANHOLE FRAME	DWG. NO. 309



TYPICAL CONNECTION PLAN FOR 3 OR 4 LOT COMMON LATERAL.
4 LOT PLAN SHOWN, 3 LOT SIMILAR.
PRIVATE EASEMENT ARRANGEMENT SHOWN TO BE USED ONLY WHEN
SEWER IN PUBLIC ROAD RIGHT–OF–WAY CANNOT BE USED.

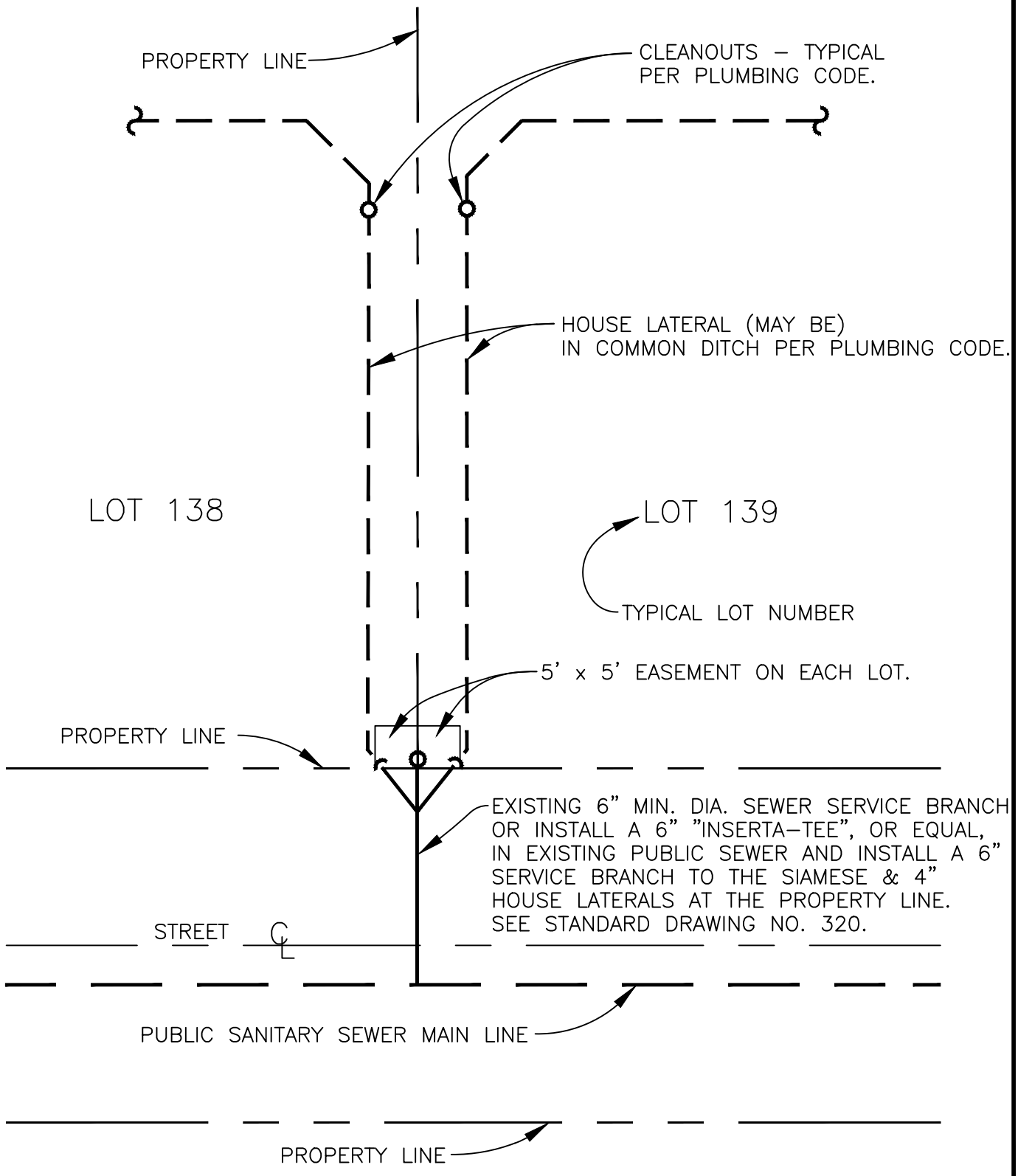
DRAWN RRB			COMMUNITY DEVELOPMENT CITY OF SCAPPOOSE 34485 E. COLUMBIA AVENUE, PO BOX "P", CITY OF SCAPPOOSE, OR. 97056	SCALE N.T.S.
DIV.				DATE 2002
REV.	DATE	APPR.		APPR.
			SANITARY SEWER CONNECTION, 3 or 4 LOTS w/ PRIVATE EASEMENTS	DWG. NO. 310



TYPICAL CONNECTION PLAN FOR 5 OR MORE LOTS.
5 LOT PLAN SHOWN, 6 OR MORE LOTS SIMILAR.

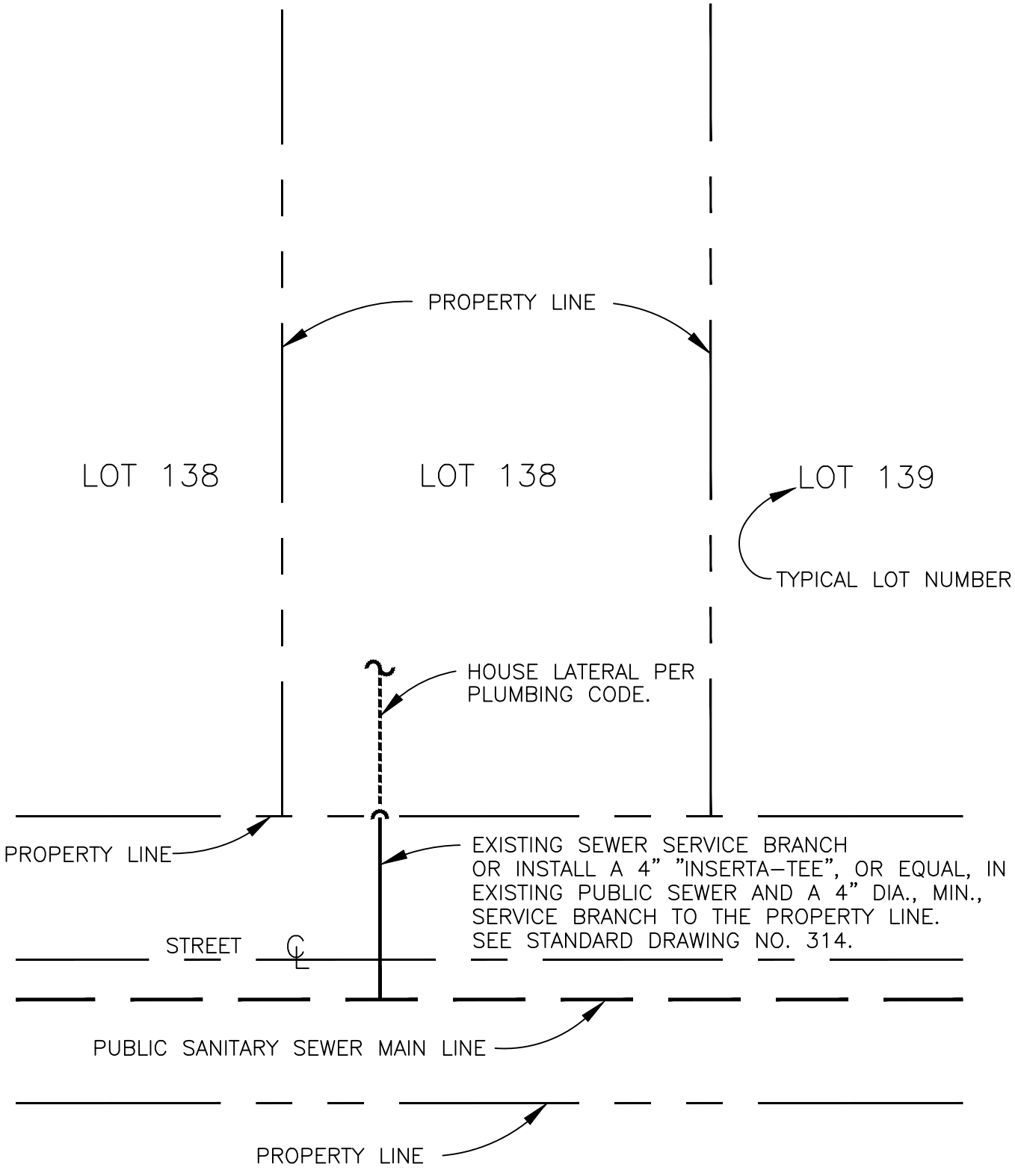
PUBLIC EASEMENT ARRANGEMENT SHOWN TO BE USED ONLY WHEN PUBLIC ROAD RIGHT–OF–WAY ALIGNMENT CANNOT BE USED.

DRAWN	RRB		COMMUNITY DEVELOPMENT	SCALE	N.T.S.
DIV.			CITY OF SCAPPOOSE	DATE	2002
REV.	DATE	APPR.	34485 E. COLUMBIA AVENUE, PO BOX "P", CITY OF SCAPPOOSE, OR. 97056	APPR.	
			SANITARY SEWER CONNECTION, 5 or MORE LOTS /w PUBLIC EASEMENT	DWG. NO.	311



TYPICAL CONNECTION FOR A 2 LOTS W/ COMMON (SIAMESE) SERVICE BRANCH

DRAWN	RRB		COMMUNITY DEVELOPMENT CITY OF SCAPPOOSE 34485 E. COLUMBIA AVENUE, PO BOX "P", CITY OF SCAPPOOSE, OR. 97056 SANITARY SEWER CONNECTION, TWO SINGLE FAMILY LOTS	SCALE	N.T.S.
DIV.				DATE	2002
REV.	DATE	APPR.		APPR.	
				DWG. NO.	312



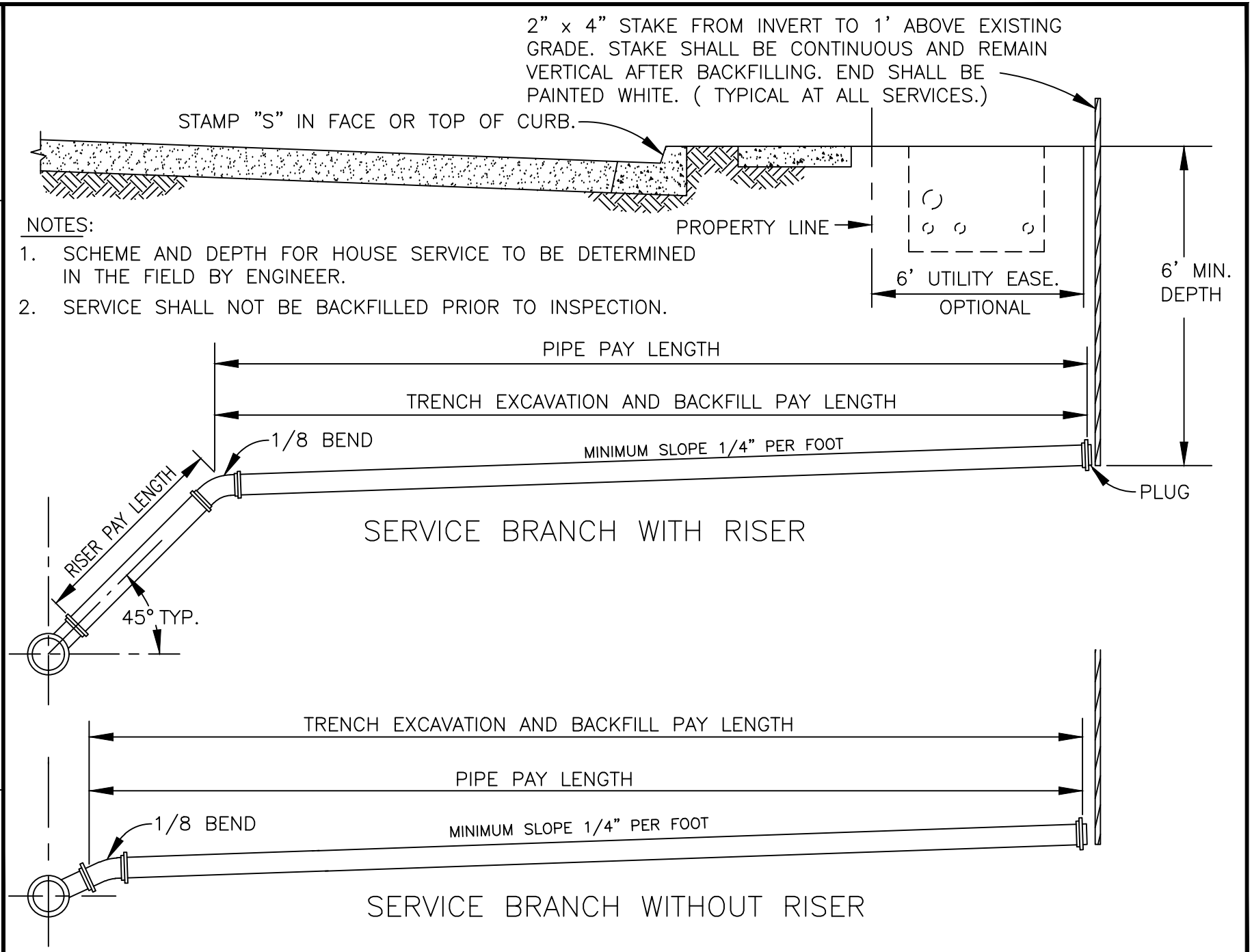
TYPICAL CONNECTION FOR SINGLE FAMILY RESIDENCE.

DRAWN	RRB	
DIV.		
REV.	DATE	APPR.

COMMUNITY DEVELOPMENT
CITY OF SCAPPOOSE
34485 E. COLUMBIA AVENUE, PO BOX "P", CITY OF SCAPPOOSE, OR. 97056

SANITARY SEWER CONNECTION, SINGLE FAMILY

SCALE	N.T.S.
DATE	2002
APPR.	
DWG. NO.	313

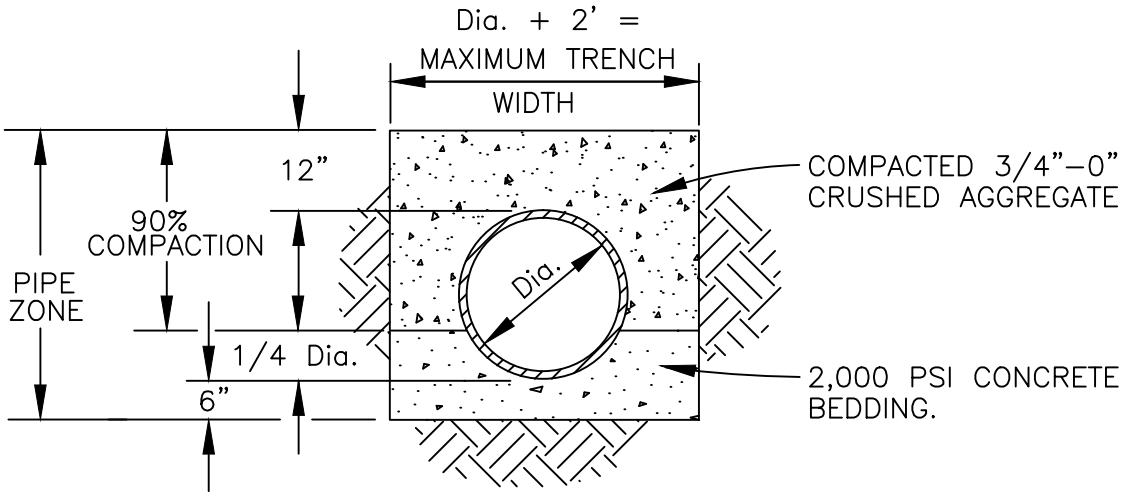


DRAWN AJB
DIV.
REV. DATE APPR.

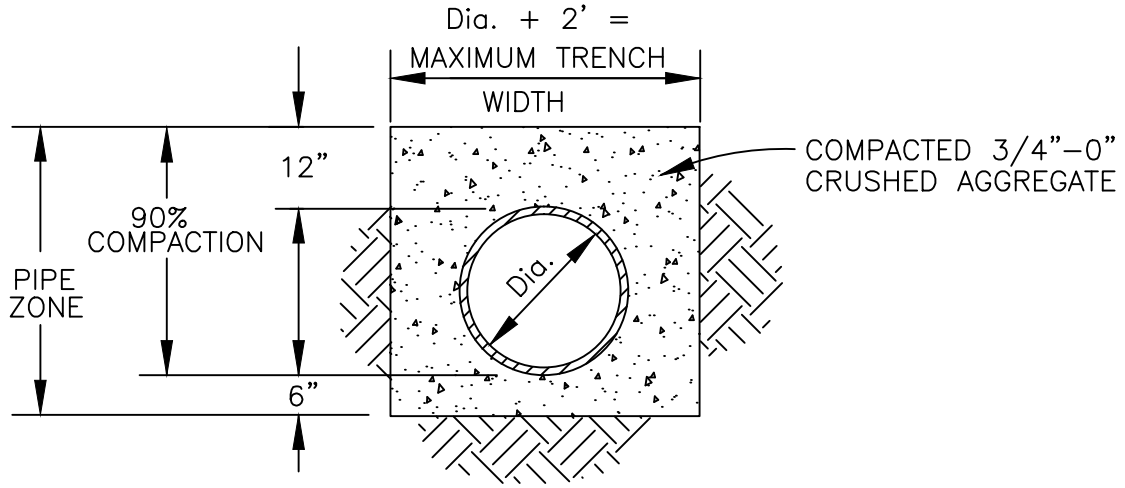
COMMUNITY DEVELOPMENT
CITY OF SCAPPOOSE
34485 E. COLUMBIA AVENUE, PO BOX "P", CITY OF SCAPPOOSE, OR. 97056

SERVICE BRANCH

SCALE N.T.S.
DATE 2002
APPR.
DWG. NO. 314



CLASS "A"



CLASS "B"

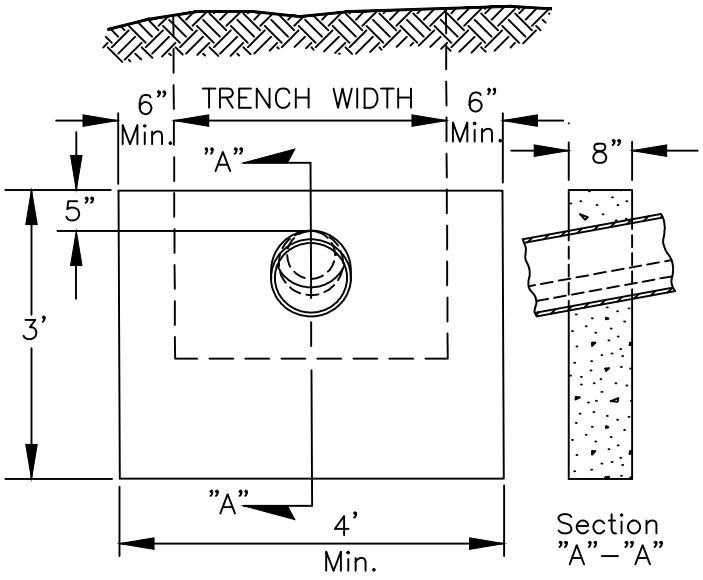
NOTE:

1. WHERE APPROVED BY THE ENGINEER, GRANULAR TRENCH STABILIZATION SHALL BE PLACED PRIOR TO THE PIPE ZONE MATERIAL. SIZE AND DEPTH OF TRENCH STABILIZATION PER SOIL CONDITIONS.

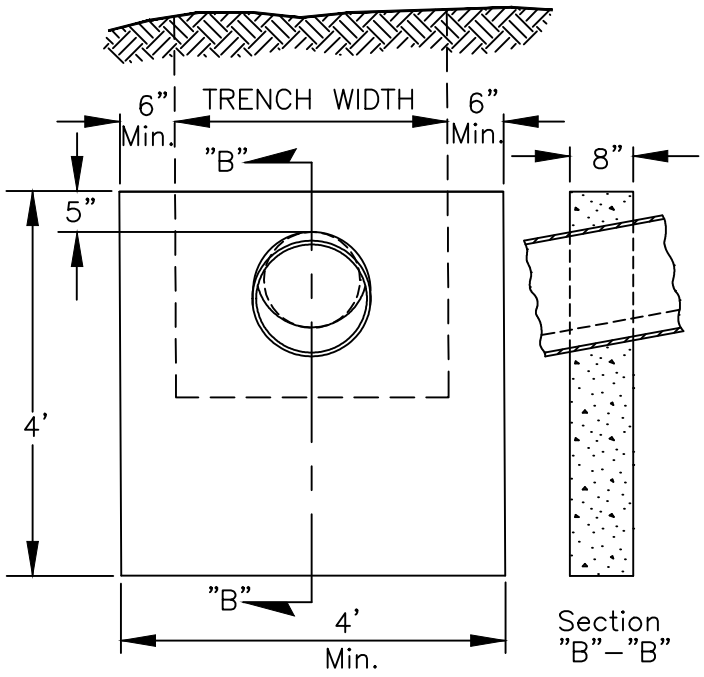
2. PIPE ZONE MATERIAL SHALL BE COMPACTED TO 90% OF ASTM D1557/ AASHTO T–180.

3. PIPE ZONE MATERIAL SHALL BE COMPACTED AS SPECIFIED PRIOR TO BACKFILLING THE REMAINDER OF THE TRENCH.

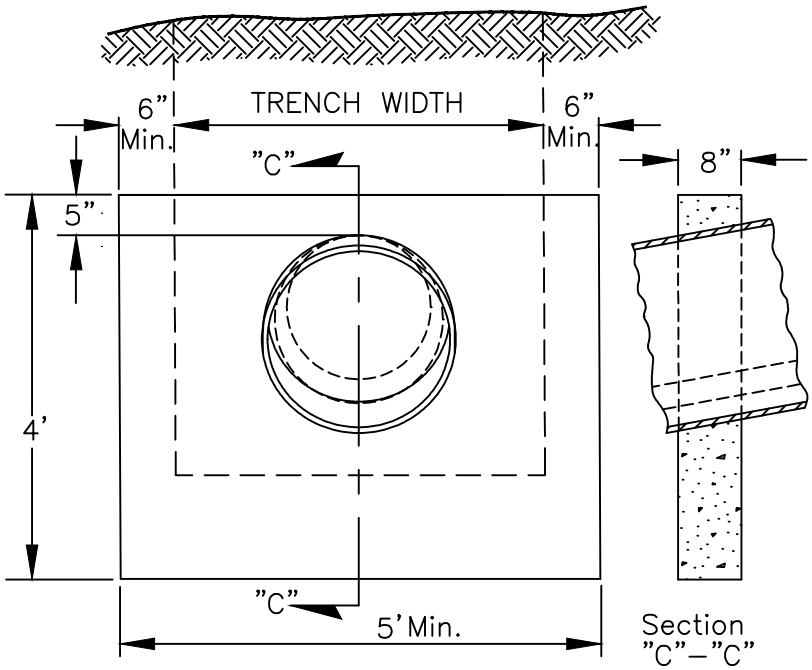
DRAWN	WRH		COMMUNITY DEVELOPMENT CITY OF SCAPPOOSE 34485 E. COLUMBIA AVENUE, PO BOX "P", CITY OF SCAPPOOSE, OR. 97056	SCALE N.T.S.
DIV.				DATE 2002
REV.	DATE	APPR.		APPR.
			SANITARY and STORM PIPE ZONE BEDDING and BACKFILL	DWG. NO. 315



FOR 6", 8", & 10" SEWER PIPE
0.29 Cu. Yd. Concrete Min.



FOR 12", & 15" SEWER PIPE
0.37 Cu. Yd. Concrete Min.



FOR 18", 21" & 24" SEWER PIPE
0.42 Cu. Yd. Concrete Min.

NOTES:

ALL MATERIAL AND WORK TO BE IN ACCORDANCE WITH CITY OF SCAPPOOSE PUBLIC WORKS DESIGN STANDARDS.

ALL CONCRETE SHALL BE 3,000 psi 28 DAY COMPRESSIVE STRENGTH, WITH 2" TO 4" SLUMP.

ANCHOR WALLS MUST BE USED WITH PIPES WITH SLOPES OVER 20%.

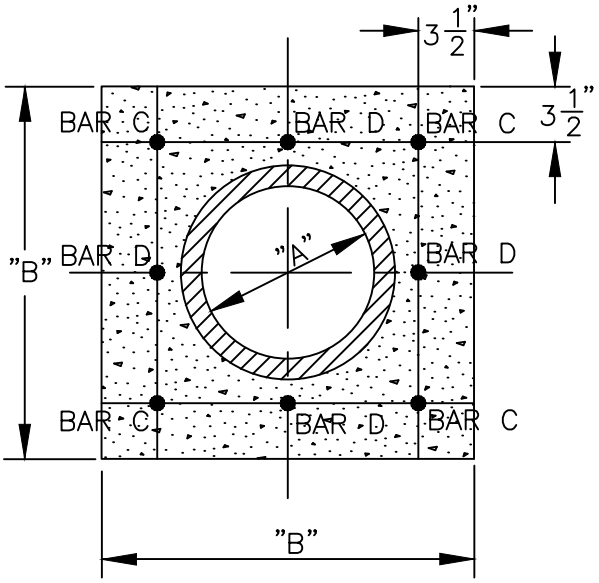
ANCHOR WALLS TO BE EQUALLY SPACED

PIPE SLOPE	WALL SPACING
20%	21'
100%	12'

PROPORTION SPACING WITH SLOPE. PLACE WALL IMMEDIATELY BELOW BELL OF PIPE WHERE POSSIBLE.

ANCHORS FOR PIPES LARGER THAN 24" TO BE DESIGNED BY GEOTECH. ENG'R.

DRAWN	AJH		COMMUNITY DEVELOPMENT CITY OF SCAPPOOSE 34485 E. COLUMBIA AVENUE, PO BOX "P", CITY OF SCAPPOOSE, OR. 97056	SCALE	N.T.S.
DIV.				DATE	2002
REV.	DATE	APPR.		APPR.	
			SEWER PIPE ANCHOR WALL	DWG. NO.	316



VERTICAL SECTION

DIMENSIONS—IN.		BARS REQ'D.
"A"	"B"	
6"	16"	C
8"	19"	C
10"	21"	C
12"	23"	C
15"	26 1/2"	C
18"	30 1/2"	C
21"	39"	C&D
24"	43"	C&D
27"	50"	C&D

NOTES:

ALL MATERIAL AND WORK TO BE IN ACCORDANCE WITH CITY OF SCAPPOOSE STANDARD SPECIFICATIONS AND REQUIREMENTS.

ALL CONCRETE SHALL BE 3,000 PSI, 3" TO 5" SLUMP.

STEEL REINFORCING SHALL BE NO. 5$^{\varnothing}$ IN CONFORMANCE WITH ASTM A 615, GRADE 60, WITH DEFORMATIONS PER ASTM A 305.

DRAWN	AJH	
DIV.		
REV.	DATE	APPR.

COMMUNITY DEVELOPMENT
CITY OF SCAPPOOSE
34485 E. COLUMBIA AVENUE, PO BOX "P", CITY OF SCAPPOOSE, OR. 97056

SEWER PIPE
CONCRETE ENCASEMENT

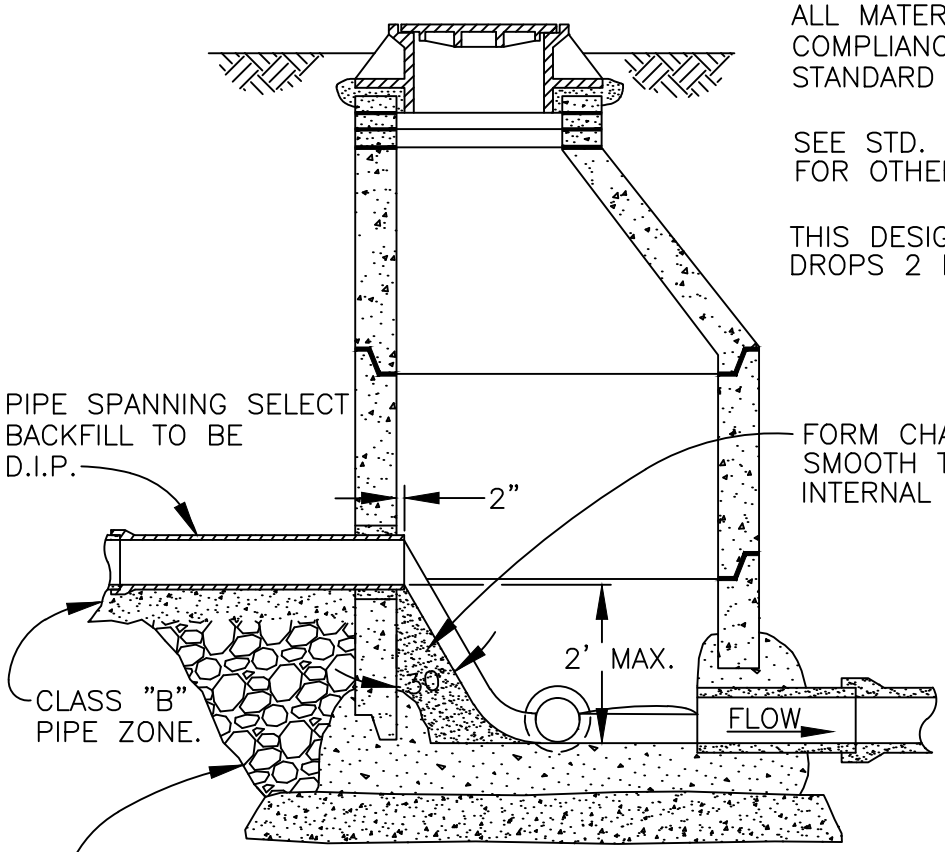
SCALE	N.T.S.
DATE	2002
APPR.	
DWG. NO.	317

NOTES:

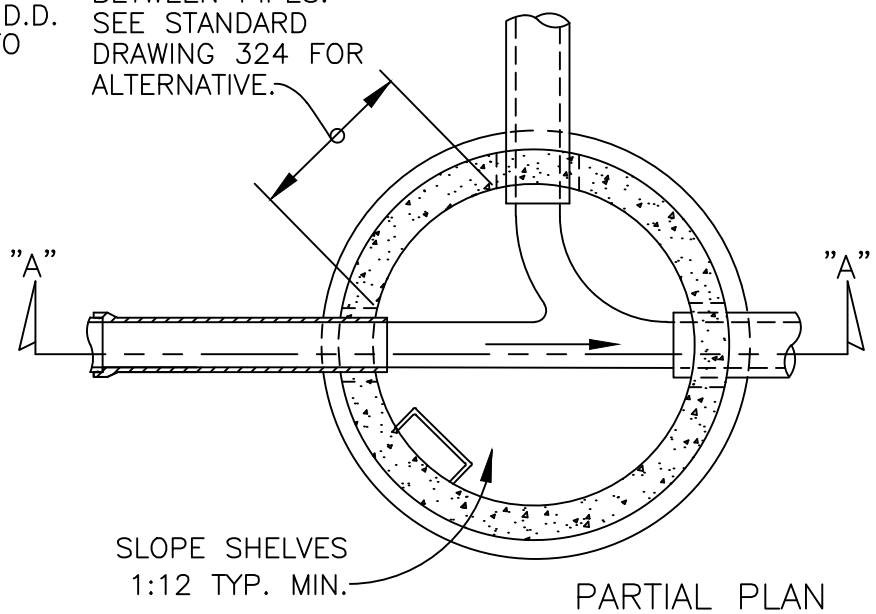
ALL MATERIAL AND WORK SHALL BE IN COMPLIANCE WITH CITY OF SCAPPOOSE STANDARD SPECIFICATIONS.

SEE STD. DWG. NOS. 319, 323, OR 324 FOR OTHER DIMENSIONS AND NOTES.

THIS DESIGN TO BE USED FOR ALL DROPS 2 FEET AND LESS.

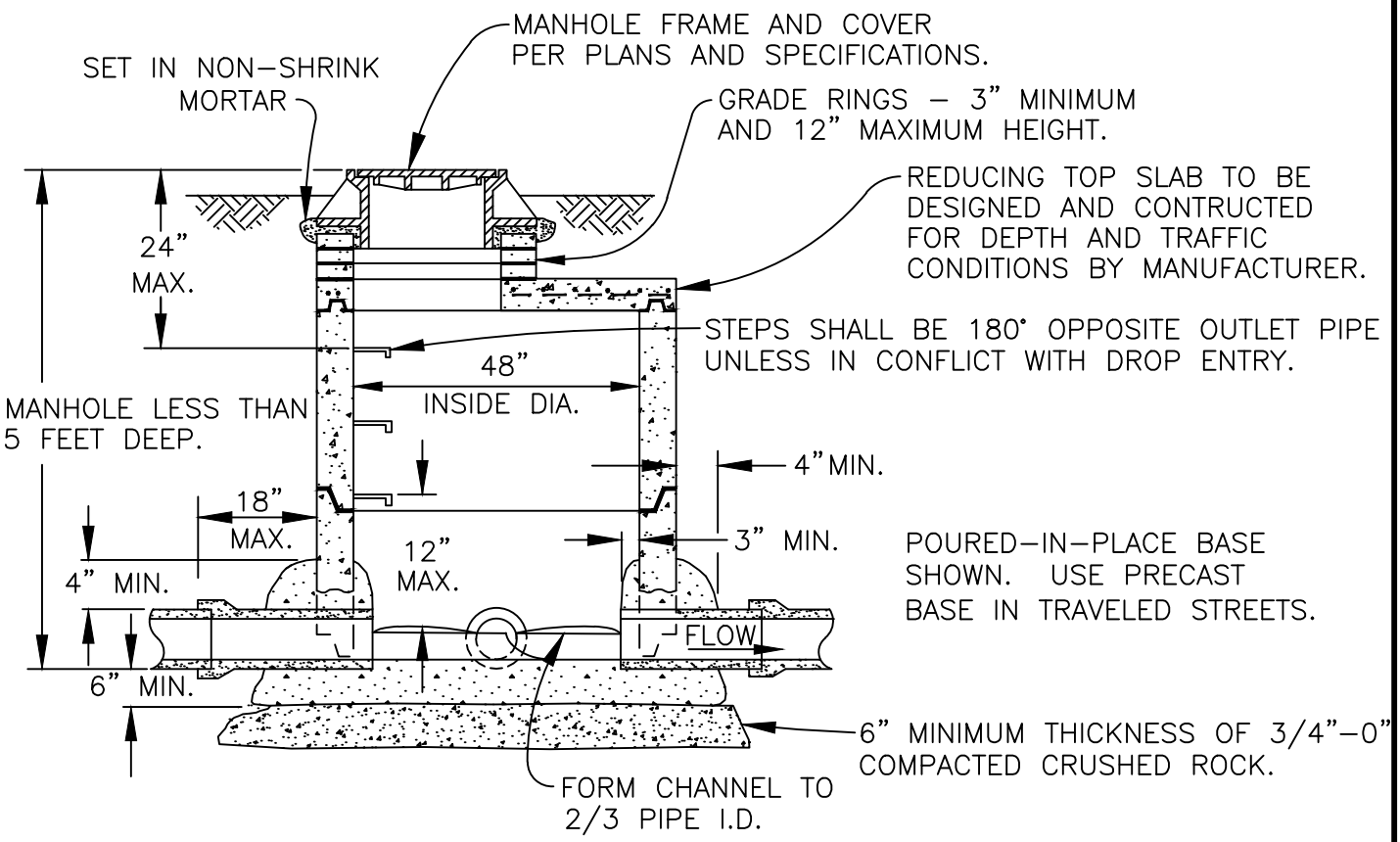


SECTION "A"–"A"

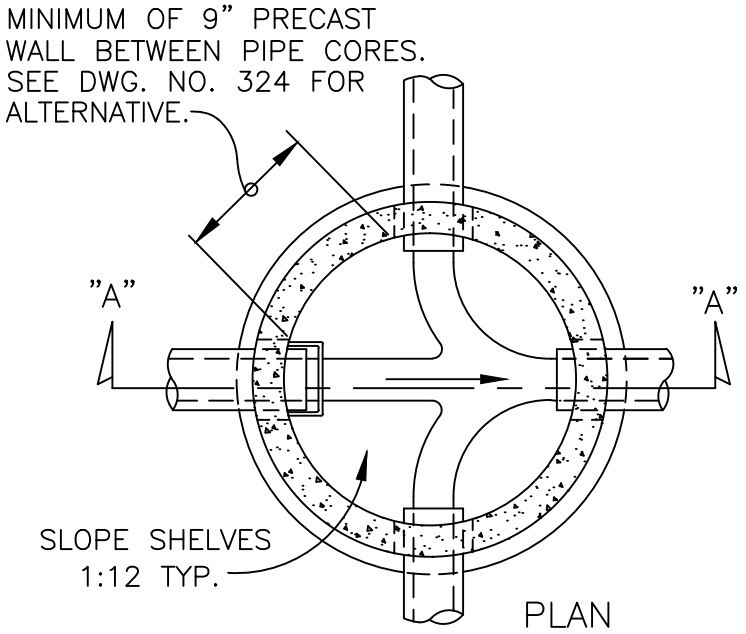


PARTIAL PLAN

DRAWN	AJH		COMMUNITY DEVELOPMENT CITY OF SCAPPOOSE 34485 E. COLUMBIA AVENUE, PO BOX "P", CITY OF SCAPPOOSE, OR. 97056	SCALE N.T.S.
DIV.				DATE 2002
REV.	DATE	APPR.		APPR.
			SHALLOW INSIDE DROP MANHOLE	DWG. NO. 318



SECTION "A"–"A"



PLAN

NOTES:

ALL MATERIAL AND WORK TO BE IN COMPLIANCE WITH CITY OF SCAPPOOSE STANDARD SPECIFICATIONS.

JOINTS SHALL BE WATER TIGHT AND COATED WITH WATERPROOF RUBBERIZED MASTIC MATERIAL BEFORE SETTING RISERS AND TOP. INSIDE JOINTS SHALL BE GROUTED.

MANHOLES SHALL HAVE A 12" MIN. 24" MAX. BOTTOM RISER. RISER TO BE BEDDED IN THE CAST–IN–PLACE CONCRETE AS THE BASE TAKES ITS' INITIAL SET.

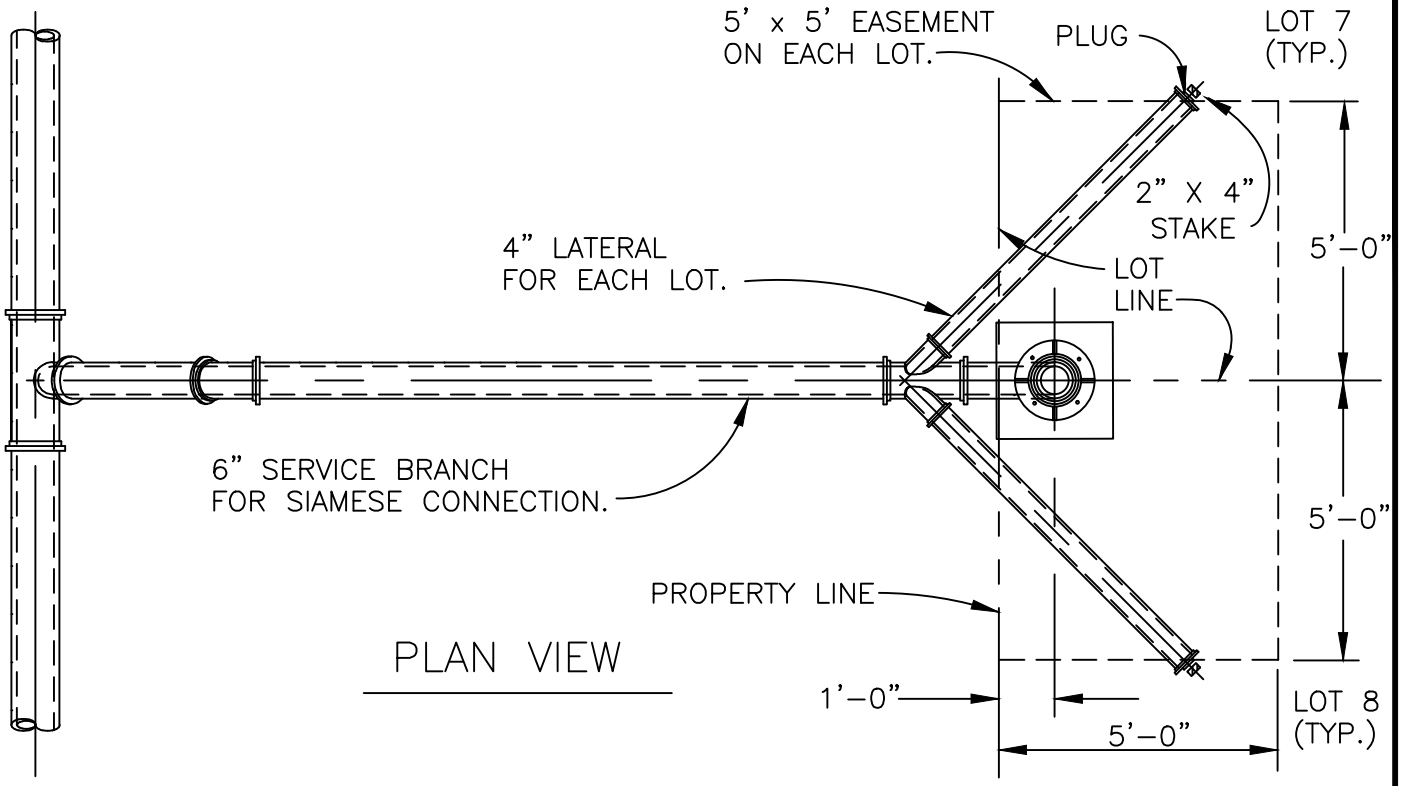
SEE STD. DWG. 303 FOR PVC PIPE MANHOLE CONNECTION DETAILS.

DRAWN	AJB	
DIV.		
REV.	DATE	APPR.

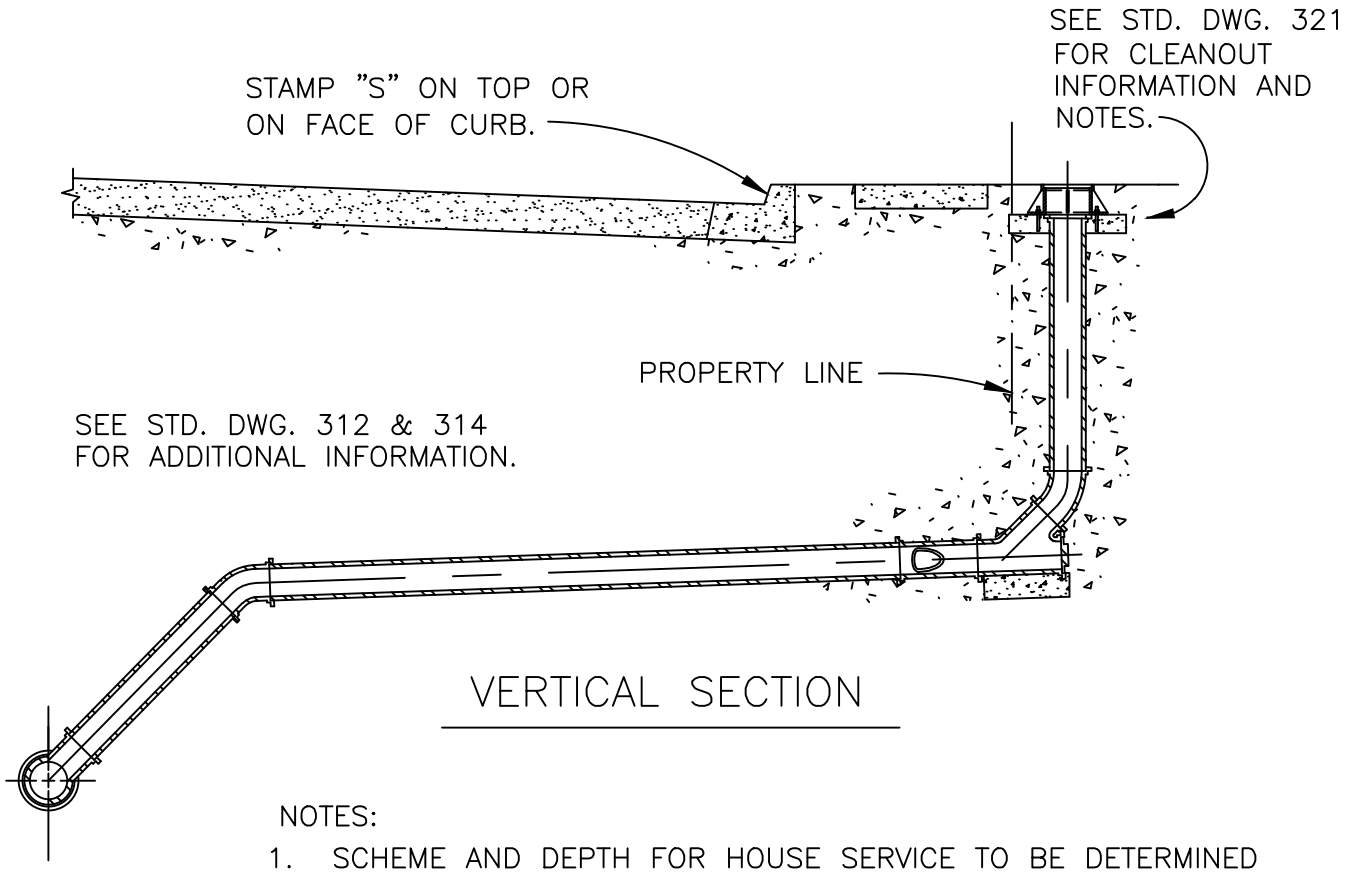
COMMUNITY DEVELOPMENT
CITY OF SCAPPOOSE
34485 E. COLUMBIA AVENUE, PO BOX "P", CITY OF SCAPPOOSE, OR. 97056

SHALLOW MANHOLE
FOR 27" and LESSER DIA. PIPES

SCALE	N.T.S.
DATE	2002
APPR.	
DWG. NO.	319



PLAN VIEW

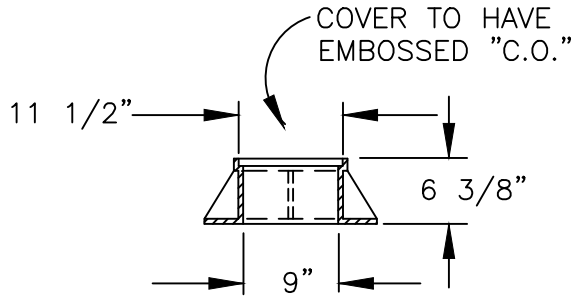


VERTICAL SECTION

NOTES:

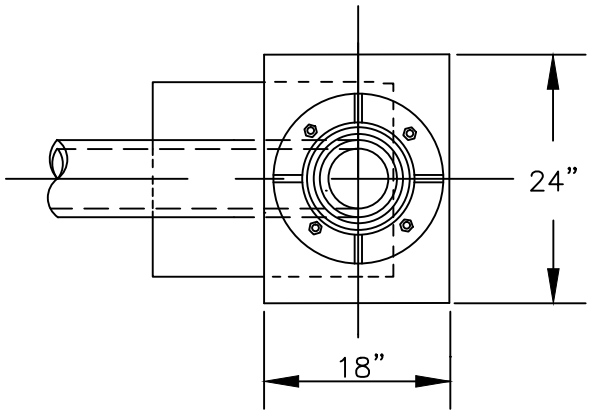
1. SCHEME AND DEPTH FOR HOUSE SERVICE TO BE DETERMINED IN THE FIELD BY ENGINEER.
2. SERVICE SHALL NOT BE BACKFILLED PRIOR TO INSPECTION.

DRAWN	DIV'N.		COMMUNITY DEVELOPMENT CITY OF SCAPPOOSE 34485 E. COLUMBIA AVENUE, PO BOX "P", CITY OF SCAPPOOSE, OR. 97056	SCALE N.T.S.
DIV.				DATE: 2002
REV.	DATE	APPR.		APPR.
			SIAMESE SERVICE BRANCH	DWG. NO. 320

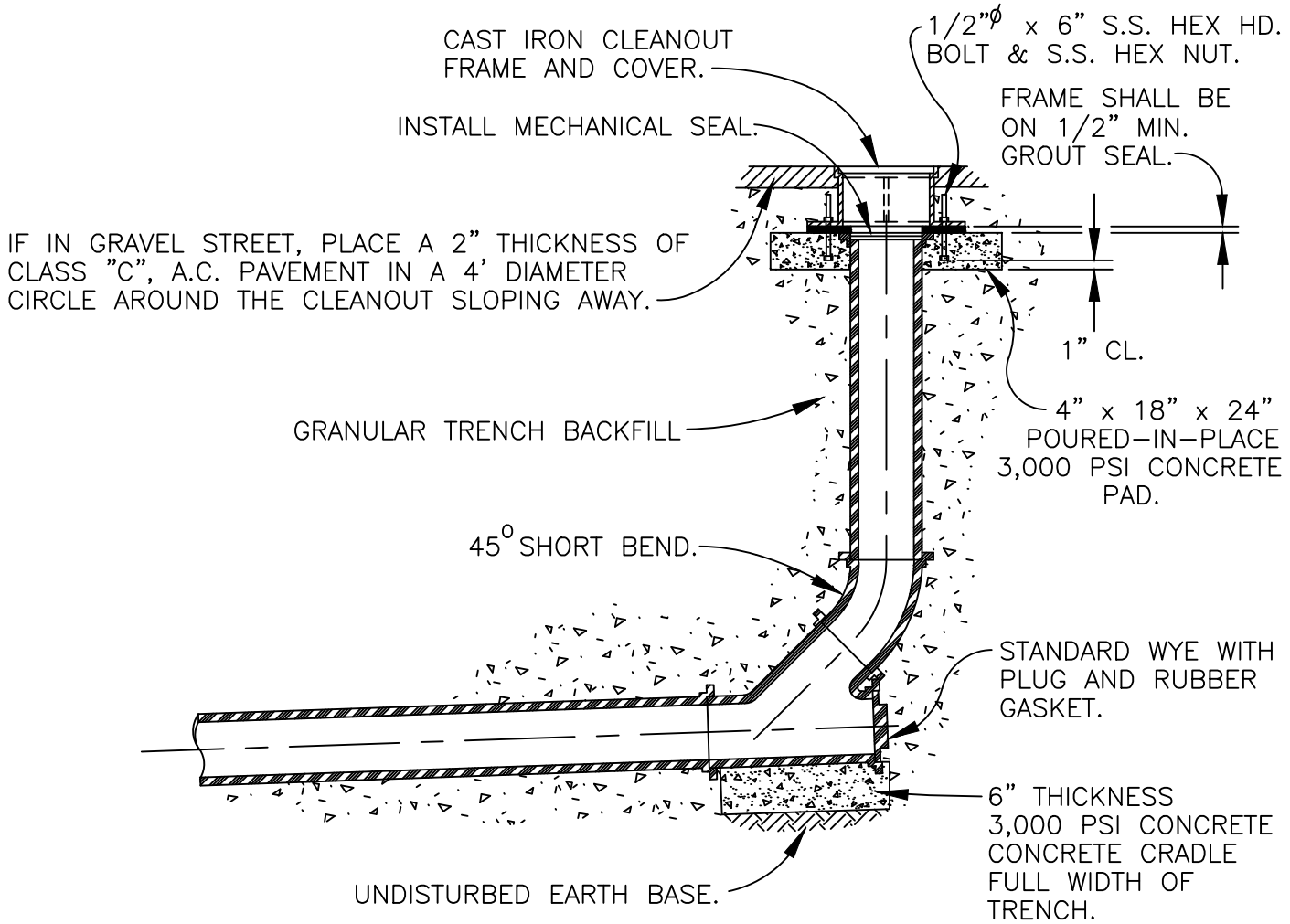


FRAME & COVER

SALEM IRON WKS.
#4233 & 4234 OR EQUAL.

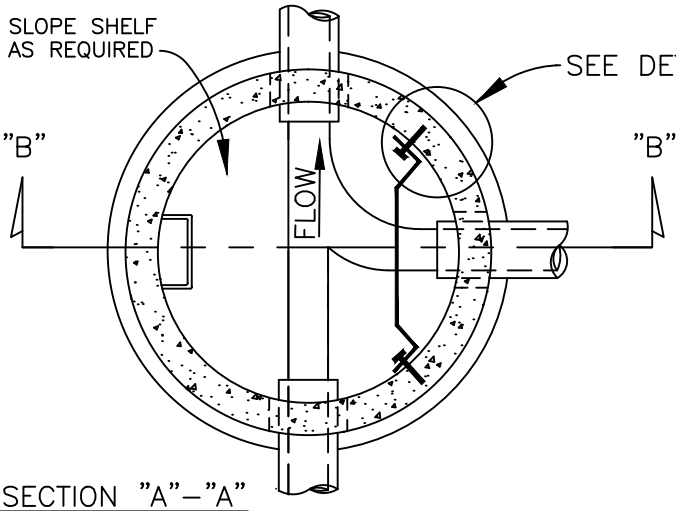


PLAN



ELEVATION

DRAWN AJB			COMMUNITY DEVELOPMENT CITY OF SCAPPOOSE 34485 E. COLUMBIA AVENUE, PO BOX "P", CITY OF SCAPPOOSE, OR. 97056	SCALE N.T.S.
DIV.				DATE 2002
REV.	DATE	APPR.		APPR.
			STANDARD CLEANOUT	DWG. NO. 321



SECTION "A"–"A"

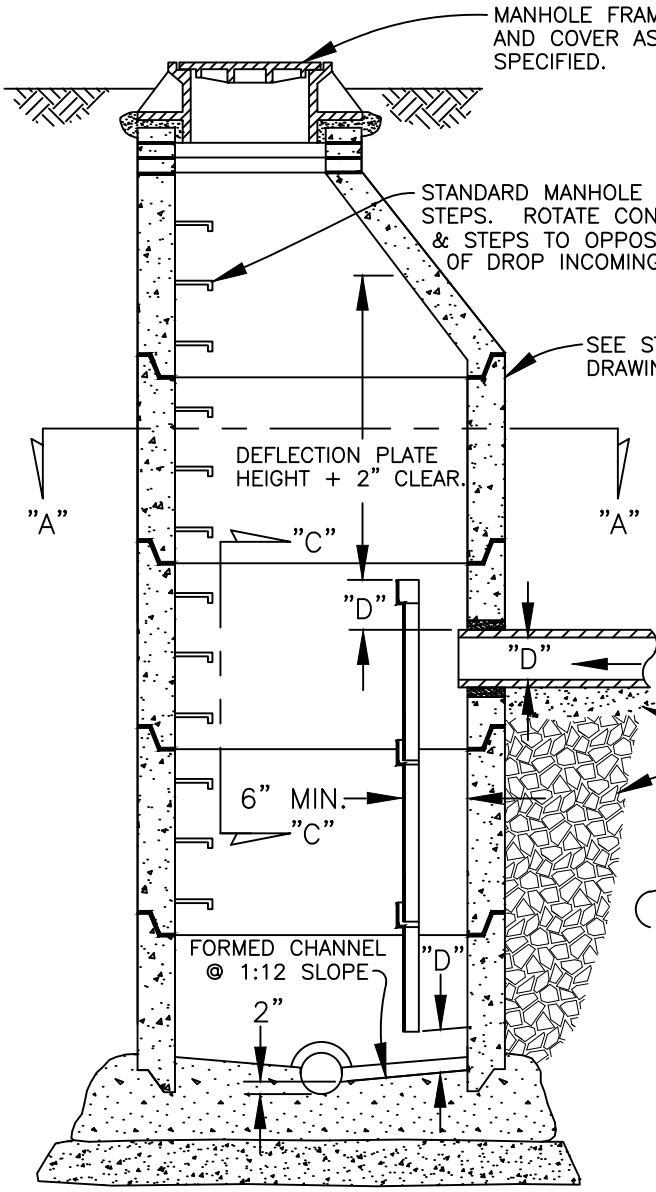
NOTES:

PARTITION MATERIAL SHALL BE 1/2" H.D.P.E (TYP. PER ASSOCIATED PIPE), OR 1/8" FIBERGLASS (TYP. PER PIPE INC.) OR 16 GA. ALUMINUM OR 18 GA. STAINLESS STEEL. FIBERGLASS SHALL BE 3 OR 4 MAT LAYUP PER MANUFACTURERS' RECOMMENDATIONS.

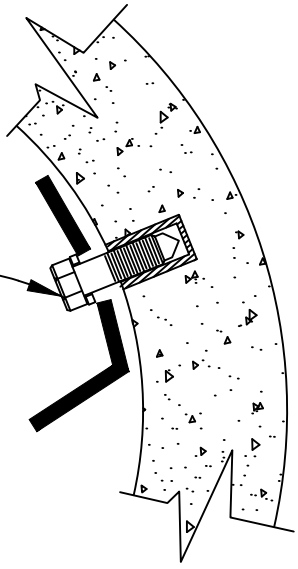
MAXIMUM FLOW IS 3 C.F.S. FOR INSIDE DROP MANHOLE. IF GREATER THAN 3 C.F.S. FLOW USE A OUTSIDE DROP MANHOLE DESIGN.

FOR A 48" DIA. MANHOLE THE MAXIMUM INCOMING PIPE DIAMETER IS 15". A LARGER DIAMETER INCOMING PIPE WILL REQUIRE A SPECIAL DESIGN.

STANDARD TYPE MANHOLE SHOWN. FLATTOP MANHOLE SIMILAR.



SECTION "B"–"B"



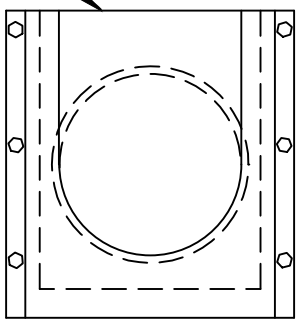
DETAIL A
(PARTITION ATTACHMENT)

15" MAX. DIA., DUCTILE IRON, CL. 52 PIPE. EXTEND TO UNDISTURBED GROUND. USE FOWLER OR FERNCO COUPLING TO CONNECT TO PVC OR CONCRETE SEWER PIPE.

CLASS "B" PIPE ZONE

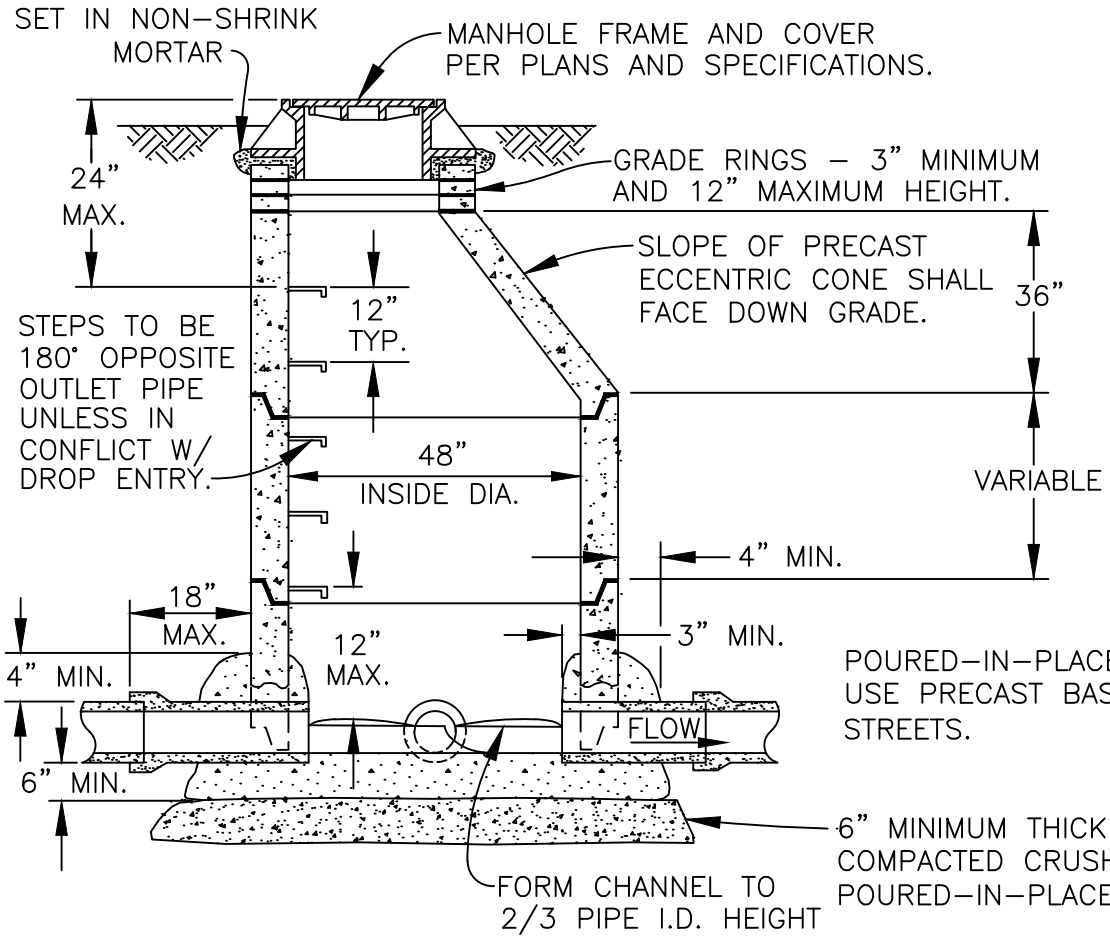
IMPORTED SELECT BACKFILL COMPACTED TO 95% M.D.D. PER AASHTO T–180.

REMOVABLE DEFLECTION PLATE (MIN. 12" WIDTH). MATERIAL TO BE STAINLESS STEEL, ALUMINUM, FIBERGLASS OR H.D.P.E. PLATE. TOP PARTITION TO BE CUT SO THAT BOTTOM OF CUT MATCHES THE INVERT OF THE INCOMING PIPE. THE RADIUS OF THE CUT SHOULD MATCH THAT OF THE INSIDE OF THE INCOMING PIPE.



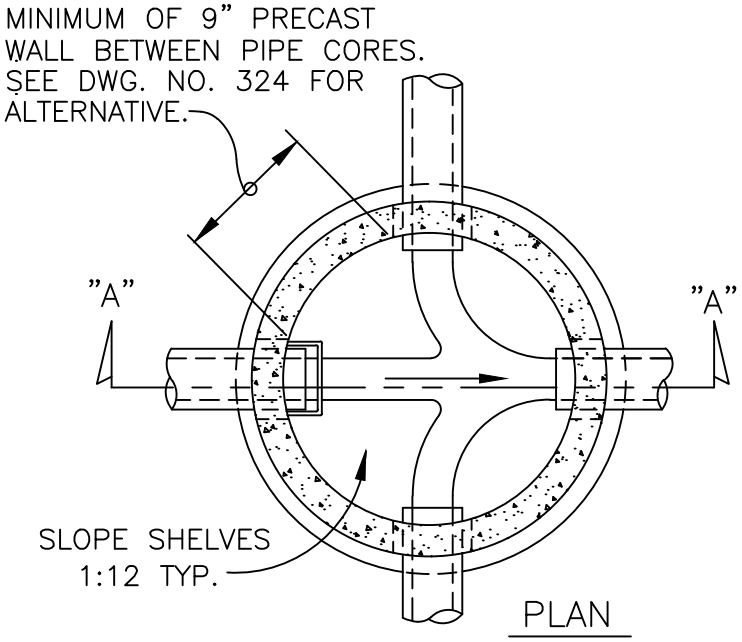
SECTION "C"–"C"

DRAWN	AJH		COMMUNITY DEVELOPMENT CITY OF SCAPPOOSE 34485 E. COLUMBIA AVENUE, PO BOX "P", CITY OF SCAPPOOSE, OR. 97056	SCALE	N.T.S.
DIV.				DATE	2002
REV.	DATE	APPR.		APPR.	
			STANDARD INSIDE DROP MANHOLE	DWG. NO.	322



POURED-IN-PLACE BASE SHOWN. USE PRECAST BASE IN TRAVELED STREETS.

SECTION "A"-"A"



PLAN

NOTES:

ALL MATERIAL AND WORK SHALL BE IN COMPLIANCE WITH CITY OF GRESHAM STANDARD SPECIFICATIONS.

JOINTS SHALL BE WATER TIGHT AND COATED WITH WATERPROOF RUBBERIZED MASTIC MATERIAL BEFORE SETTING RISERS AND TOP. INSIDE JOINTS SHALL BE GROUTED.

MANHOLES SHALL HAVE A 12" MIN., 24" MAX. BOTTOM RISER. RISER TO BE BEDDED IN THE CAST-IN-PLACE CONCRETE AS THE BASE TAKES ITS' INITIAL SET.

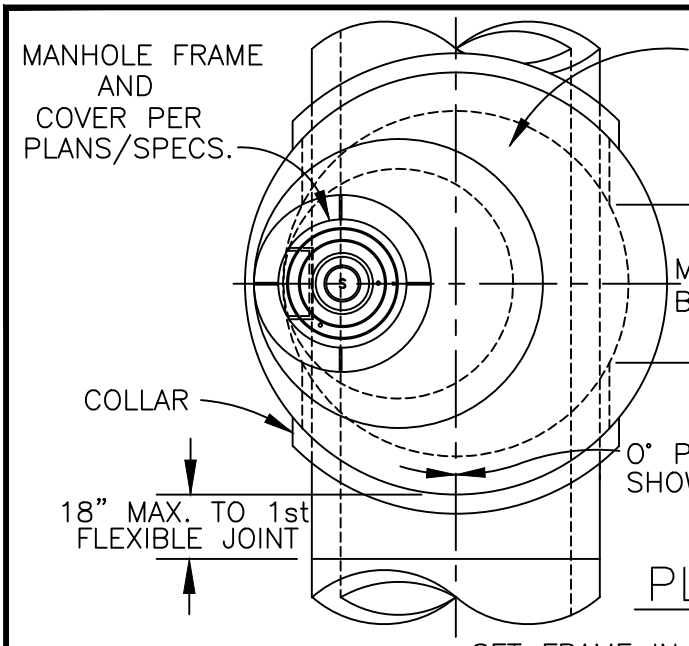
SEE STD. DWG. 303 FOR PVC PIPE MANHOLE CONNECTION DETAILS.

DRAWN: AJB		
DIV.		
REV.	DATE	APPR.

COMMUNITY DEVELOPMENT
CITY OF SCAPPOOSE
34485 E. COLUMBIA AVENUE, PO BOX "P", CITY OF SCAPPOOSE, OR. 97056

STANDARD MANHOLE
FOR 27" and LESSER DIA. PIPES

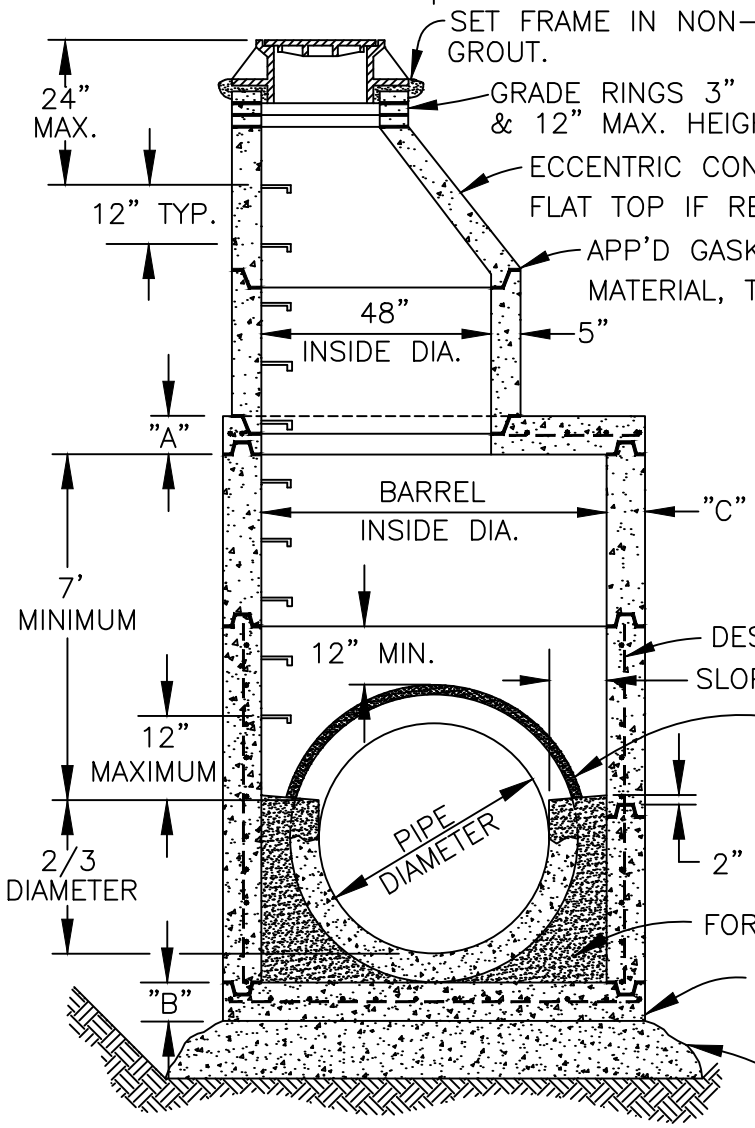
SCALE	N.T.S.
DATE	2002
APPR.	
DWG. NO.	323



PLAN

PIPE DIA. IN.	MINIMUMS BARREL DIA.* IN.	"A" DIM. IN.	"B" DIM. IN.	"C" DIM. IN.
30"	66"	6"	8"	8"
33"	72"	7"	8"	8"
36"	72"	7"	8"	8"
42"	78"	7"	8"	8"
48"	84"	8"	8"	8"
54"	90"	8"	8"	8"
60"	96"	9"	12"	12"
66"	102"	10"	12"	12"
72"	108"	10"	12"	12"
78"	114"	10"	12"	12"
84"	120"	11"	12"	12"
90"	126"	11"	12"	12"
96"	132"	12"	12"	12"

* APPLIES TO (2) PIPE MANHOLES WITH 0° DEFLECTION. OTHER NUMBERS OF PIPES OR DEFLECTION WILL REQUIRE LARGER SIZE.



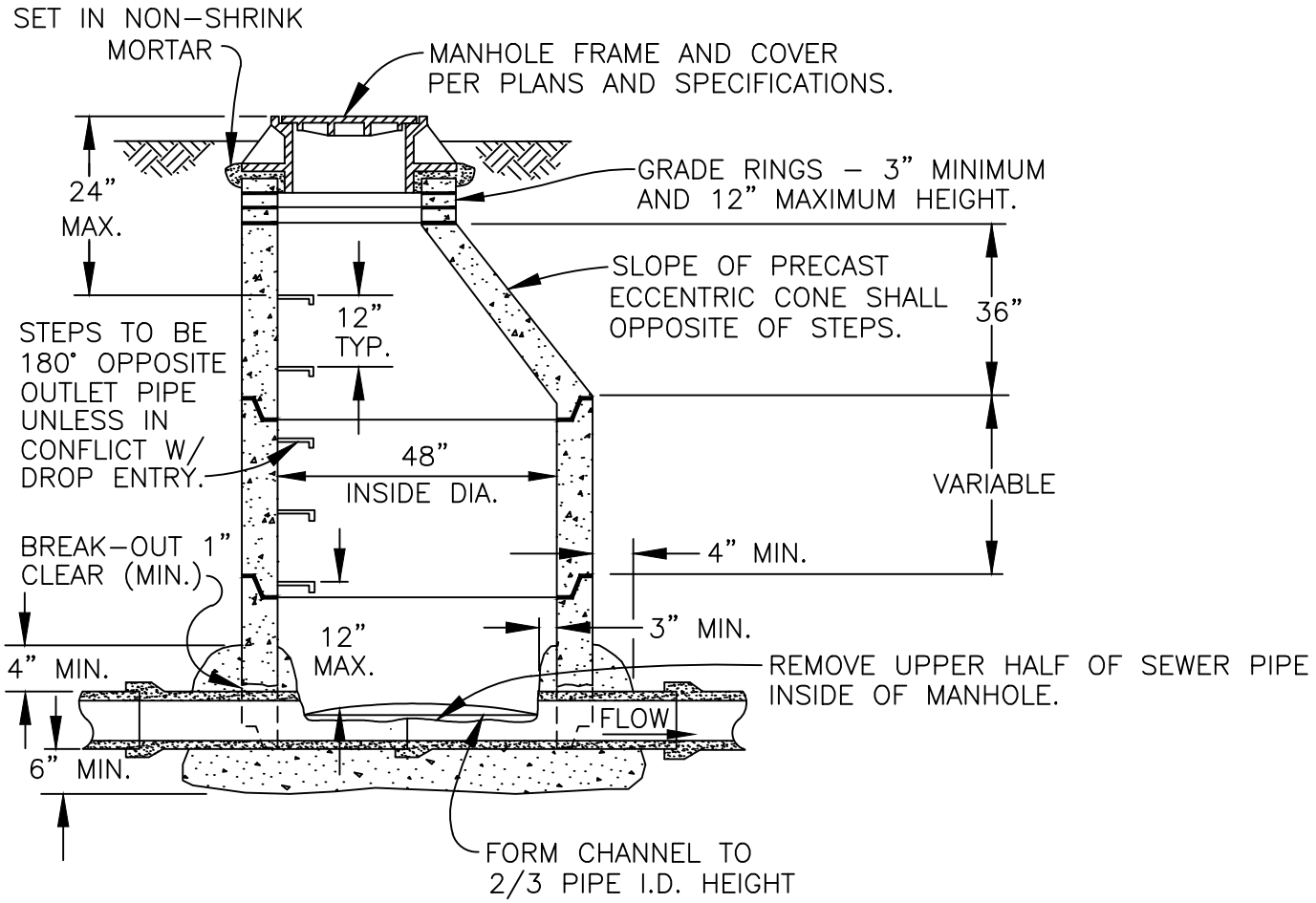
VERTICAL SECTION

NOTES:

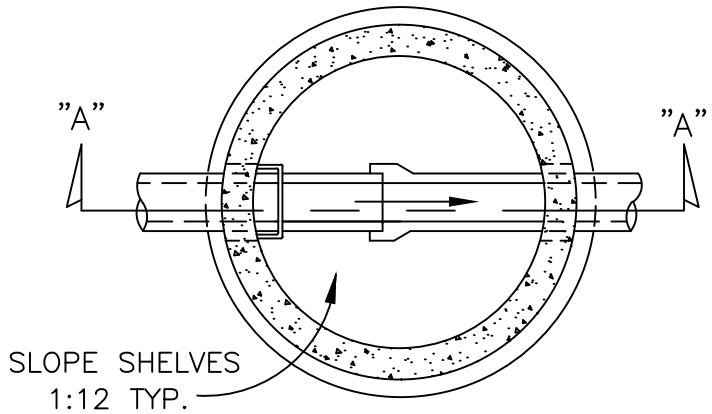
ALL MATERIAL & WORK SHALL BE AS REQUIRED BY CITY OF SCAPPOOSE STANDARD PLANS & SPECIFICATIONS.

STEPS TO BE AS DETAILED IN STANDARD SPECIFICATIONS.

DRAWN: AJH	COMMUNITY DEVELOPMENT CITY OF SCAPPOOSE 34485 E. COLUMBIA AVENUE, PO BOX "P", CITY OF SCAPPOOSE, OR. 97056	SCALE: N.T.S.
DIV.		DATE: 2002
REV. / DATE / APPR.		APPR.
	STANDARD MANHOLE FOR 30" and LARGER DIA. PIPES	DWG. NO. 324



SECTION "A"–"A"



PARTIAL PLAN

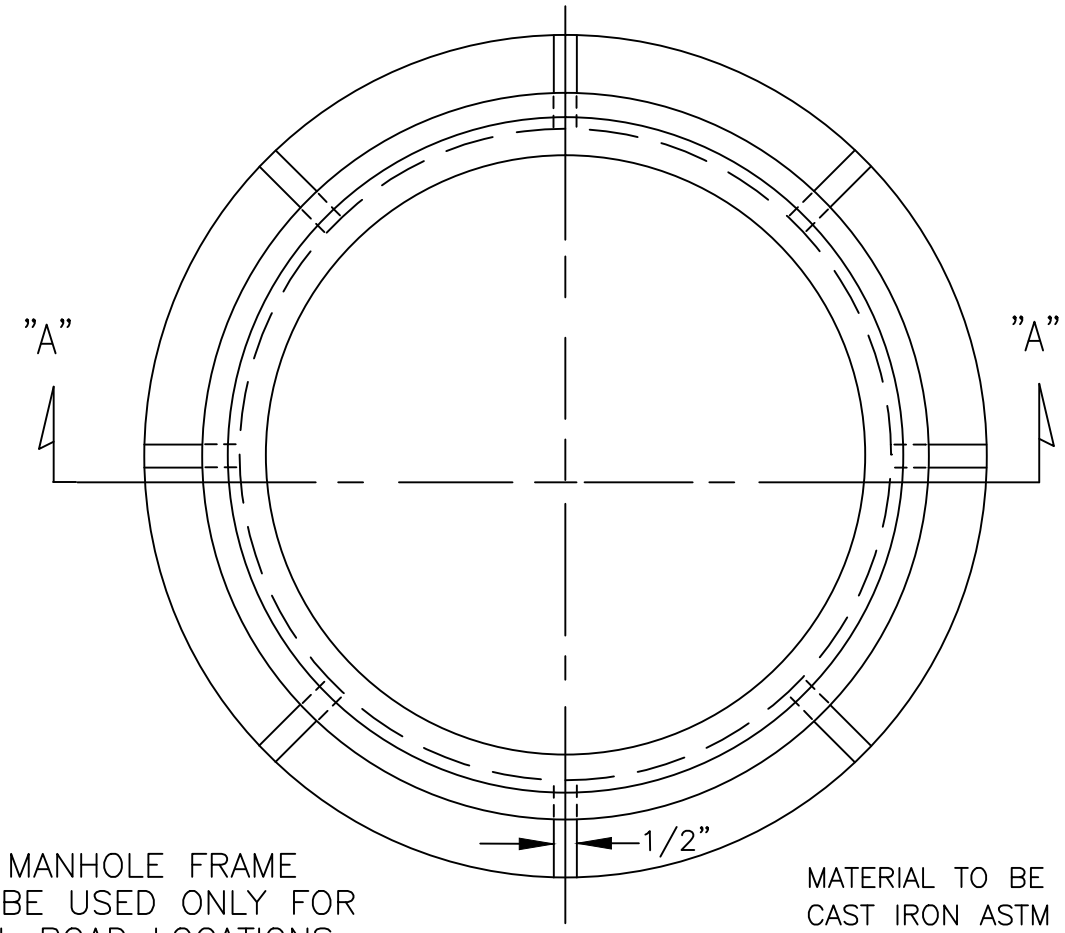
NOTES:

ALL MATERIAL AND WORK SHALL BE IN COMPLIANCE WITH CITY OF SCAPPOOSE STANDARD SPECIFICATIONS.

JOINTS SHALL BE WATER TIGHT AND COATED WITH WATERPROOF RUBBERIZED MASTIC MATERIAL BEFORE SETTING RISERS AND TOP. INSIDE JOINTS SHALL BE GROUTED.

MANHOLES SHALL HAVE A 12" MIN., 24" MAX. BOTTOM RISER. RISER TO BE BEDDED IN THE CAST–IN–PLACE CONCRETE AS THE BASE TAKES ITS' INITIAL SET.

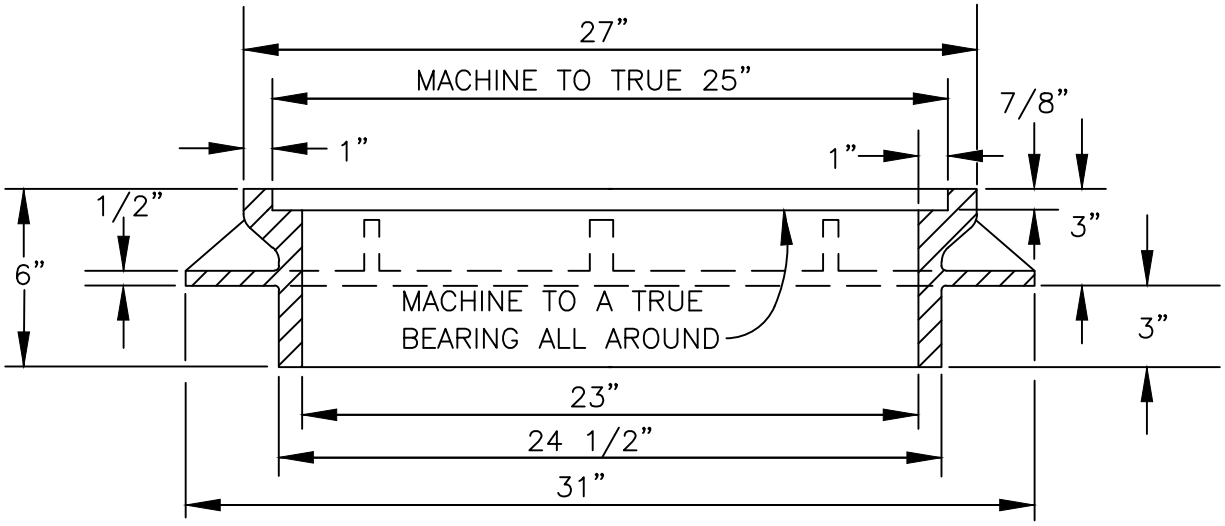
DRAWN	AJB		COMMUNITY DEVELOPMENT CITY OF SCAPPOOSE 34485 E. COLUMBIA AVENUE, PO BOX "P", CITY OF SCAPPOOSE, OR. 97056	SCALE	N.T.S.
DIV.				DATE	2002
REV.	DATE	APPR.		APPR.	
			STANDARD SAMPLING MANHOLE	DWG. NO.	325



THIS MANHOLE FRAME MAY BE USED ONLY FOR LOCAL ROAD LOCATIONS.

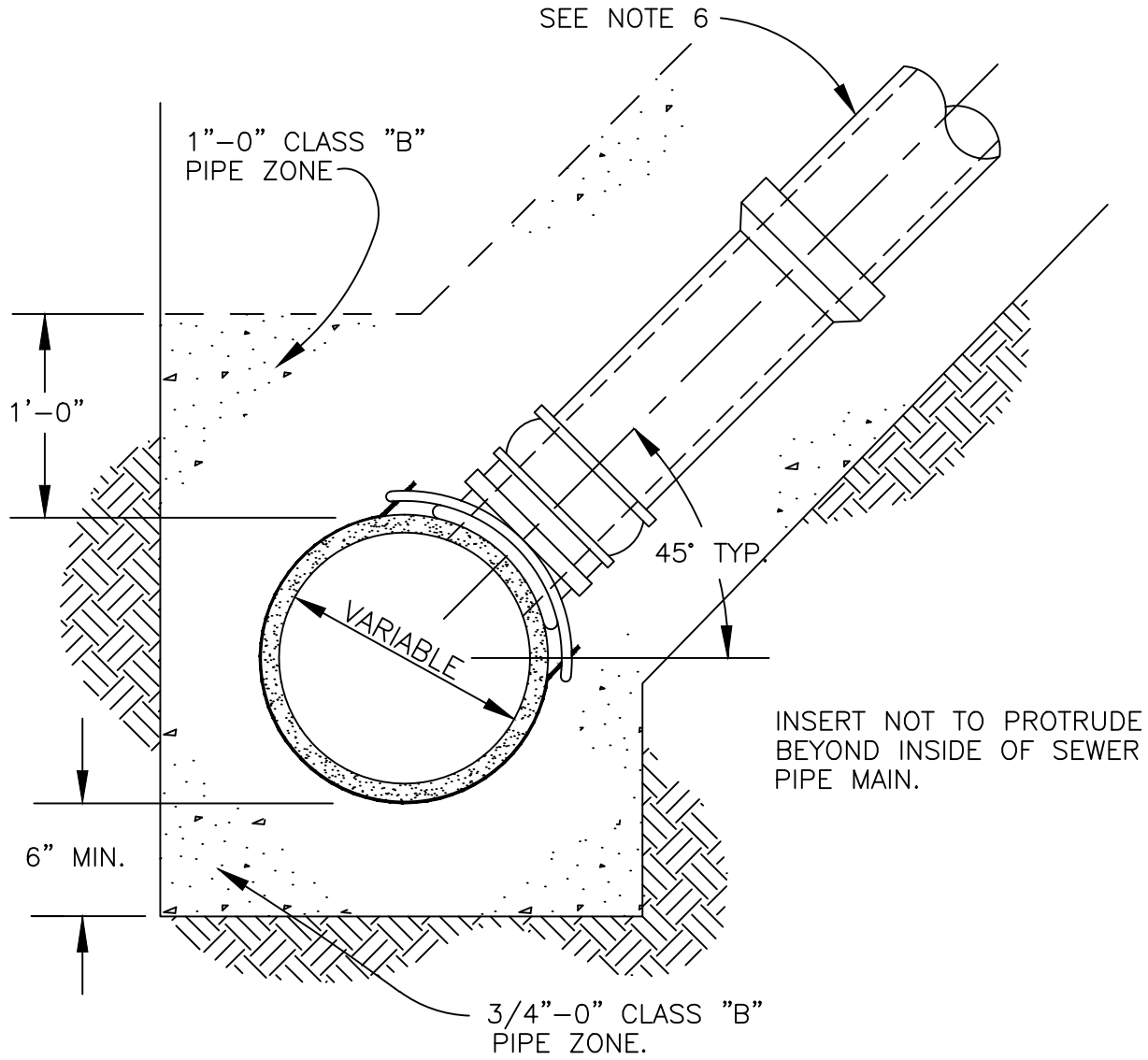
PLAN

MATERIAL TO BE GRAY CAST IRON ASTM A–48, CLASS 30.
WEIGHT = 172 LBS.



SECTION "A"–"A"

DRAWN	AJB		COMMUNITY DEVELOPMENT CITY OF SCAPPOOSE 34485 E. COLUMBIA AVENUE, PO BOX "P", CITY OF SCAPPOOSE, OR. 97056 SUBURBAN MANHOLE FRAME 3" DEPTH	SCALE N.T.S.
DIV.				DATE 2002
REV.	DATE	APPR.		APPR.
				DWG. NO. 326



NOTES:

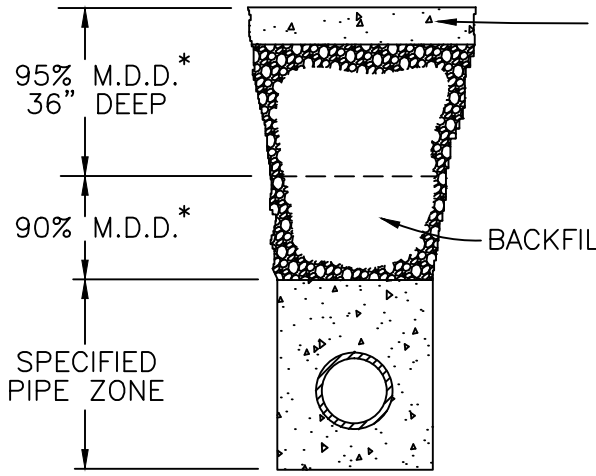
1. THE TAP SHALL NOT BE MADE EXCEPT IN THE PRESENCE OF A CITY INSPECTOR; NOR SHALL ANY CONNECTION BE MADE WITHOUT CITY APPROVAL.
2. A "INSERTA–TEE" OR "FERNCO" TYPE TAPPING SADDLE SHALL BE USED.
3. THE HOLE MADE IN MAIN TO BE CORED.
4. ℄ OF TAP TO BE ABOVE SPRINGLINE.
5. 4" MAXIMUM HOLE FOR 8" MAIN (CUT–IN TEE TO BE USED FOR 6" SERVICE BRANCH ON 8" MAIN).
6. 4" SERVICE BRANCH MAY BE USED FOR SINGLE FAMILY LOTS ONLY.

DRAWN	AJB	
DIV.		
REV.	DATE	APPR.

COMMUNITY DEVELOPMENT
CITY OF SCAPPOOSE
34485 E. COLUMBIA AVENUE, PO BOX "P", CITY OF SCAPPOOSE, OR. 97056

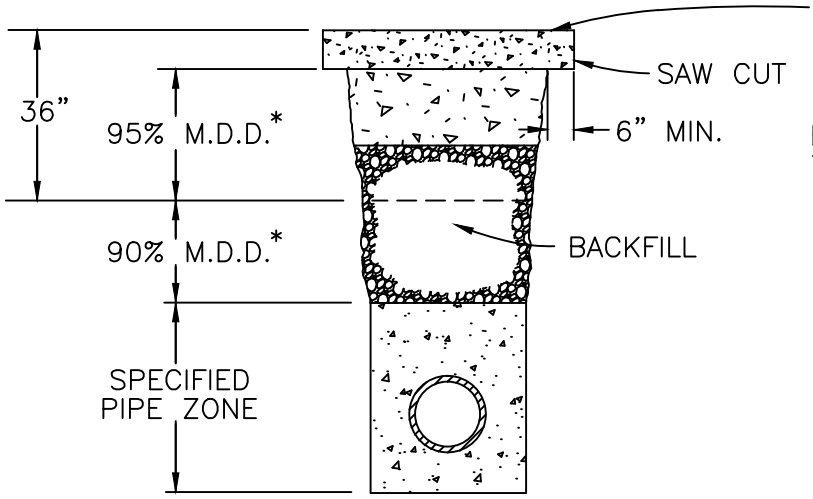
TAP IN EXISTING SEWER MAIN FOR SERVICE BRANCH

SCALE	N.T.S.
DATE	2002
APPR.	
DWG. NO.	327



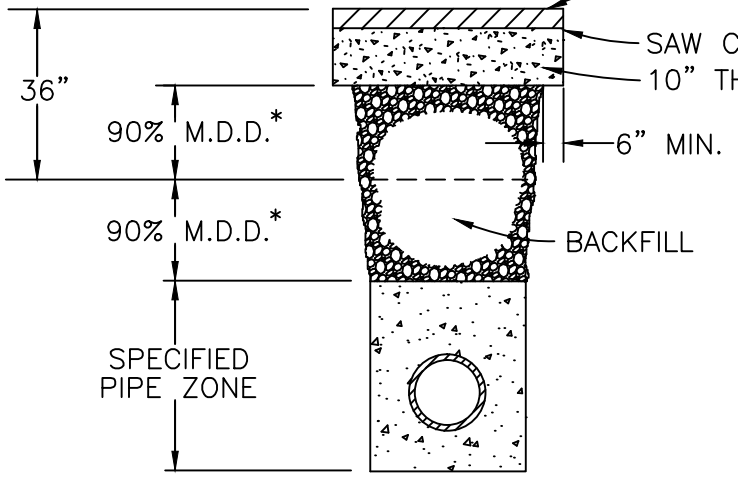
UNLESS OTHERWISE SPECIFIED, SURFACE RECONSTRUCTION SHALL CONSIST OF A 6" THICKNESS OF 1"–0" CRUSHED AGGREGATE.

TRAVELED UNIMPROVED STREET



UNLESS OTHERWISE SPECIFIED, SURFACE RESTORATION SHALL BE 3,000 PSI CONCRETE PAVING EQUAL TO THE DEPTH OF THE EXISTING CONCRETE OR A 6" THICKNESS, WHICHEVER IS GREATER, ON TOP OF A 12" THICKNESS OF COMPACTED CRUSHED AGGREGATE.

CONCRETE SURFACE STREET



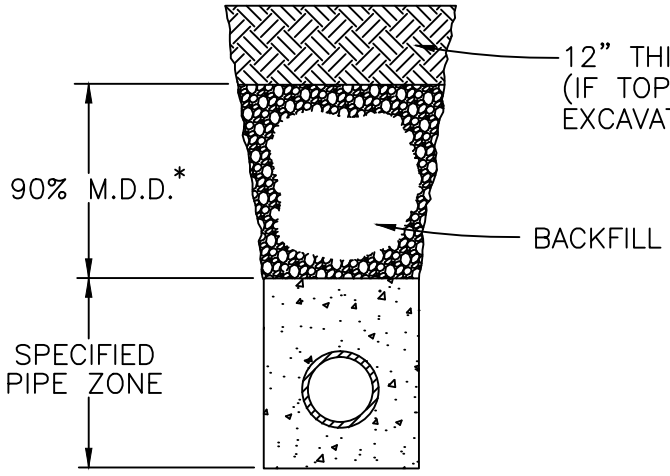
CTB STREET

NOTES:

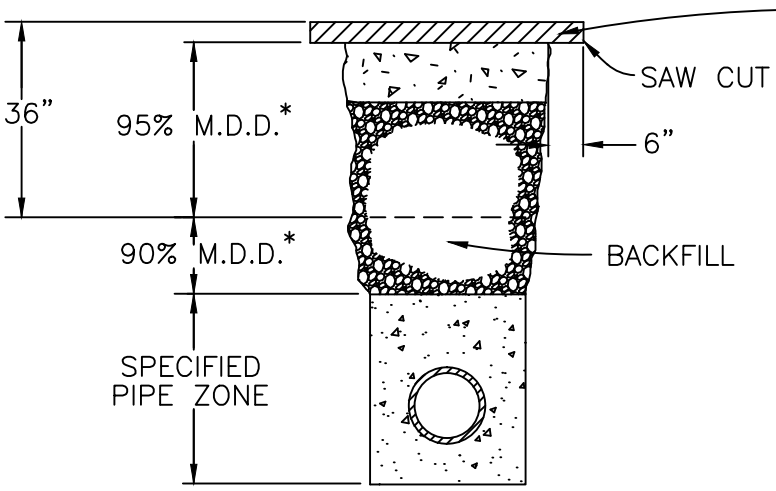
1. BACKFILL SHALL BE IMPORTED GRANULAR OR NATIVE BACKFILL AS APPROVED.
2. COMPACTION STANDARD SHALL BE ASTM D1557/AASHTO T–180 WHEN NOT OTHERWISE SPECIFIED.
3. PRIOR TO SURFACE RESTORATION SAWCUT EXISTING SURFACING 6" OUTSIDE EXTENT OF DISTURBED SOILS.

*M.D.D. = MAX. DRY DENSITY

DRAWN	WRH		COMMUNITY DEVELOPMENT CITY OF SCAPPOOSE 34485 E. COLUMBIA AVENUE, PO BOX "P", CITY OF SCAPPOOSE, OR. 97056	SCALE N.T.S.
DIV.				DATE 2002
REV.	DATE	APPR.		APPR.
			TYPICAL TRENCH SECTION BACKFILL and SURFACING	DWG. NO. 328

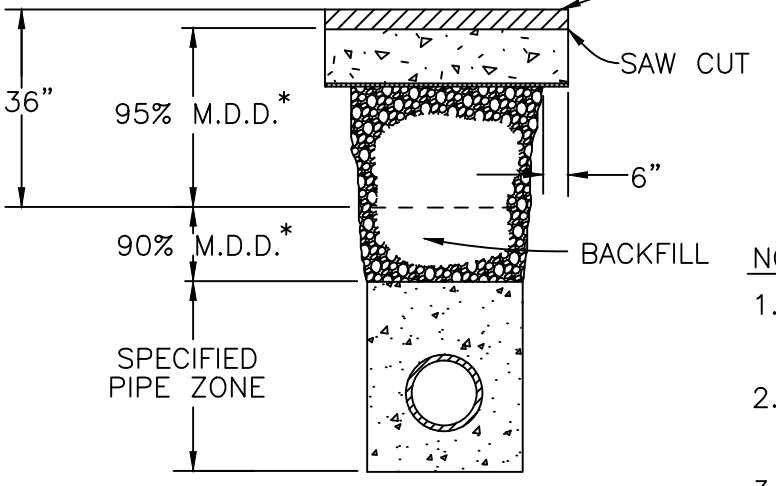


IN OFF-ROAD AREAS



SURFACE RESTORATION SHALL BE A 3 1/2" THICKNESS OF CLASS "C" A.C. PAVEMENT PLACED IN 2 LIFTS OR THE DEPTH OF THE EXISTING A.C. PAVEMENT PLACED IN 2" LIFTS, WHICHEVER IS GREATER, PLACED ON A 12" THICKNESS OF 1"-0" CRUSHED AGGREGATE.

ASPHALT CONCRETE SURFACE STREET



SURFACE RESTORATION SHALL BE A 3 1/2" THICKNESS OF CLASS "C" A.C. PAVEMENT PLACED IN 2 LIFTS OR THE DEPTH OF THE EXISTING A.C. PAVEMENT PLACED IN 2" LIFTS, WHICHEVER IS GREATER, PLACED ON A 12" THICKNESS OF 1"-0" CRUSHED AGGREGATE PLACED ON A SUBGRADE GEOTEXTILE. LAP FABRIC JOINTS 6".

ASPHALT CONCRETE SURFACE STREET & GEOTEXTILE FABRIC

NOTES:

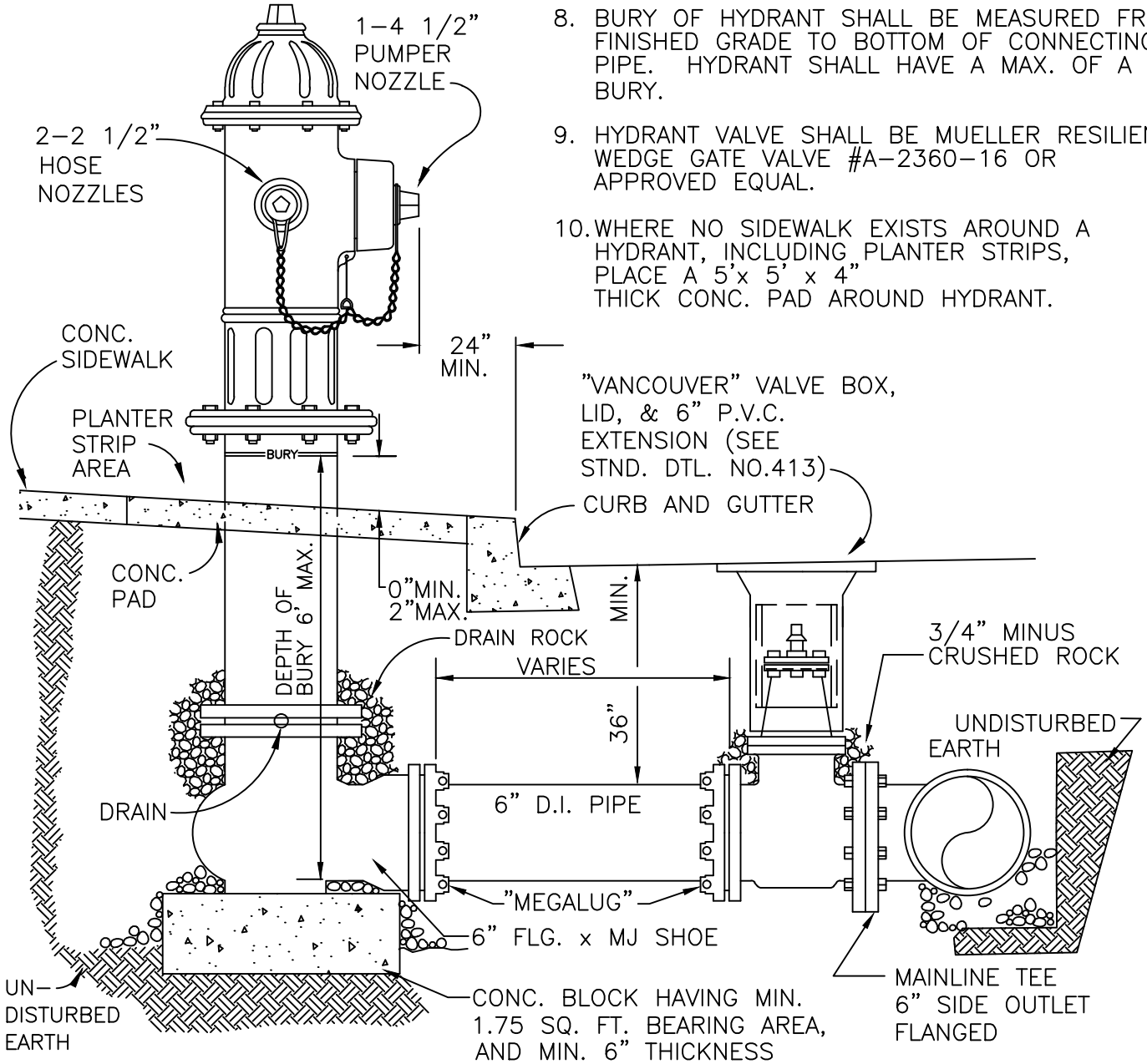
1. BACKFILL SHALL BE IMPORTED GRANULAR OR NATIVE BACKFILL AS APPROVED.
2. COMPACTION STANDARD SHALL BE ASTM D1557/AASHTO T-180 WHEN NOT OTHERWISE SPECIFIED.
3. PRIOR TO SURFACE RESTORATION SAWCUT EXISTING SURFACING 6" OUTSIDE EXTENT OF DISTURBED SOILS.

*M.D.D. = MAX. DRY DENSITY

DRAWN	WRH		COMMUNITY DEVELOPMENT CITY OF SCAPPOOSE 34485 E. COLUMBIA AVENUE, PO BOX "P", CITY OF SCAPPOOSE, OR. 97056	SCALE N.T.S.
DIV.				DATE 2002
REV.	DATE	APPR.		APPR.
			TYPICAL TRENCH SECTION BACKFILL and SURFACING	DWG. NO. 329

NOTES:

1. HYDRANTS TO BE APPROVED BY CITY ENGINEER.
2. HYDRANT COLOR TO BE SHERWIN WILLIAMS GCC–5006.
3. ALL MJ'S ON TEE, VALVE & F.H. TO BE RESTRAINED WITH "MEGALUG" FOLLOWER GLANDS. RESTRAIN MIN 10' OF PIPE EACH SIDE OF TEE ON MAIN LINE. NO JOINTS BETWEEN VALVE AND SHOE UNLESS OVER 18'.
4. HYDRANT DRAIN HOLES TO REMAIN OPEN TO DRAIN ROCK AND OPERATIONAL
5. MIN. 4 CU. FT. OF 1 1/2"–3/4" CLEAN DRAIN ROCK SHALL BE PLACED AROUND SHOE UP TO A MIN. OF 6" ABOVE DRAIN OUTLETS.
6. WHERE PLANTER STRIP EXISTS. HYDRANT SHALL BE PLACED SO FRONT PORT IS A MIN. OF 24" BEHIND FACE OF CURB.
7. WHERE INTEGRAL S/W & CURB EXIST, HYD. PUMPER PORT SHALL BE PLACED AT BACK OF SIDEWALK, OR AS DIRECTED BY ENGINEER.
8. BURY OF HYDRANT SHALL BE MEASURED FROM FINISHED GRADE TO BOTTOM OF CONNECTING PIPE. HYDRANT SHALL HAVE A MAX. OF A 6' BURY.
9. HYDRANT VALVE SHALL BE MUELLER RESILIENT WEDGE GATE VALVE #A–2360–16 OR APPROVED EQUAL.
10. WHERE NO SIDEWALK EXISTS AROUND A HYDRANT, INCLUDING PLANTER STRIPS, PLACE A 5'x 5' x 4" THICK CONC. PAD AROUND HYDRANT.

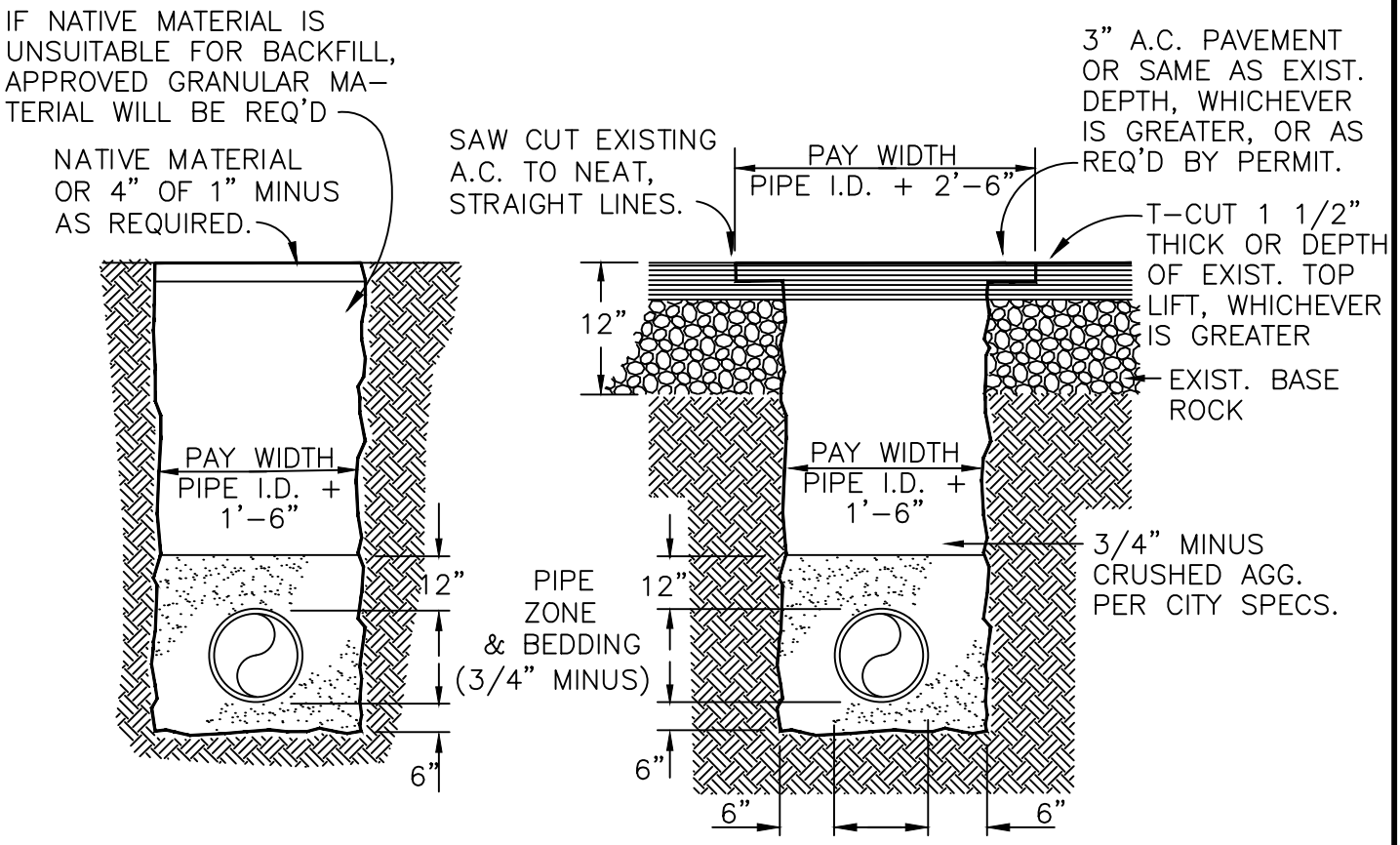


DRAWN	DRAWN	
DIV.	DEPT	
REV.	DATE	APPR.

COMMUNITY DEVELOPMENT
CITY OF SCAPPOOSE
34485 E. COLUMBIA AVENUE, PO BOX "P", CITY OF SCAPPOOSE, OR. 97056

STANDARD FIRE HYDRANT ASSEMBLY

SCALE	N.T.S.
DATE	2002
APPR.	
DWG. NO.	401



SHOULDER OR LANDSCAPED SECTION

PAVING SECTION

NOTES.

1. ALL WATER MAINS SHALL HAVE A MIN. COVER OF 36" IN RIGHT-OF-WAY AND 48" IN EASEMENTS
2. ALL TRENCH BACKFILL SHALL BE COMPACTED TO 95% OF MAX. DENSITY PER AASHTO T-180 OR AS SPECIFIED IN THE CONTRACT DOCUMENTS.
3. ALL TRENCH BACKFILL AND PATCHING SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE GOVERNING AGENCY.
4. PAYMENT FOR PAVEMENT CUT AND REPAIR SHALL INCLUDE ALL A.C. AND CRUSHED AGGREGATE TO 12" BELOW FINISH GRADE.
5. SAND BACKFILL WILL BE REQ'D IN PIPE ZONE WHEN PIPE LINE IS TO BE POLYBAGGED.
6. BACKFILL SHALL BE PLACED AND COMPACTED IN LIFTS, OR AS DETERMINED IN FIELD BY THE CITY ENGINEER.

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REV.	DATE	APPR.

COMMUNITY DEVELOPMENT
CITY OF SCAPPOOSE
34485 E. COLUMBIA AVENUE, PO BOX "P", CITY OF SCAPPOOSE, OR. 97056

STANDARD TRENCH SECTION

SCALE	N.T.S.
DATE	DATE
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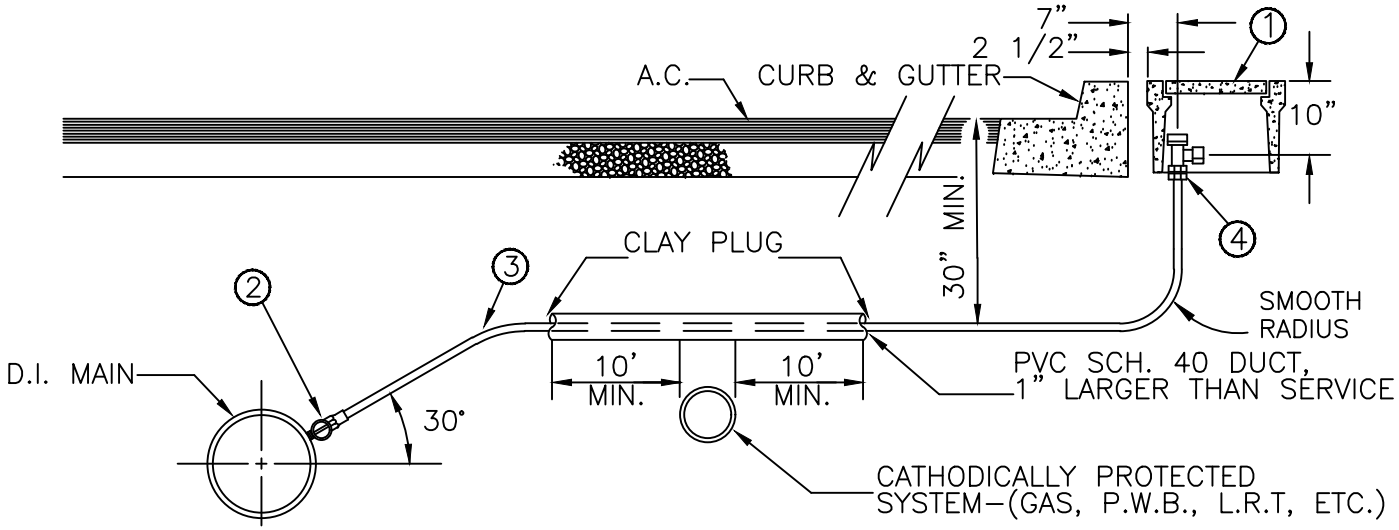
DWG. NO.	402



MATERIALS:

1. OLDCASTLE METER BOX, BODY NO. 37, LID AND COVER NO. 37–S.
2. MUELLER CORP. STOP NO. H–15000 (FLARE), H–15008 (110 COMPRESSION), OR FORD F600 (FLARE).
3. 1" SOFT TEMPER, TYPE "K" COPPER TUBING COMPLYING WITH ASTM B–88.
4. MUELLER ANGLE METER STOP NO. H–14255 (FLARE), H–14258 (110 COMPRESSION), OR FORD NO. KV23–444W (FLARE).

NOTES:

1. SUBSTITUTES FOR ANY MATERIALS SHOWN SHALL BE APPROVED BY THE CITY ENGINEER.
2. ALL PIPE AND STRUCTURE ZONES SHALL BE BACKFILLED USING 3/4" MINUS CRUSHED AGG. AND COMPACTED TO 95% MAX. DENS. AS DETERMINED BY AASHTO T–180.
3. WHEN AN ACTIVE CATHODIC PROTECTED SYSTEM IS ENCOUNTERED, SCH. 40 PVC SHALL BE INSTALLED WITH IMPERVIOUS PLUG AS SHOWN ABOVE.
4. METER BOX SHALL BE CENTERED OVER THE COMPLETED METER ASSEMBLY.
5. FOR VACANT RESIDENTIAL LOTS, LOCATE SERVICE 18" INSIDE SIDE LOT LINE. LOT LINE TO BE PROJECTED PERPENDICULAR TO CURB.
6. ANGLE METER STOP SHALL BE PERPENDICULAR TO CURB LINE.
7. SET CORP. STOP WITH OPERATING NUT AT 3 OR 9 O'CLOCK.
8. TRAFFIC BEARING METER BOX LIDS SHALL BE USED WHERE METERS ARE LOCATED WITHIN ANY PORTION OF DRIVEWAY OR APRON AND OTHER TRAFFIC AREAS.
9. ONLY APPROVED BIT AND TAPPING MACHINE ALLOWED FOR INSTALLATION OF CORP. STOP.
10. COPPER SERVICE SHALL BE INSTALLED IN A DIRECT LINE BETWEEN TAP AND METER.

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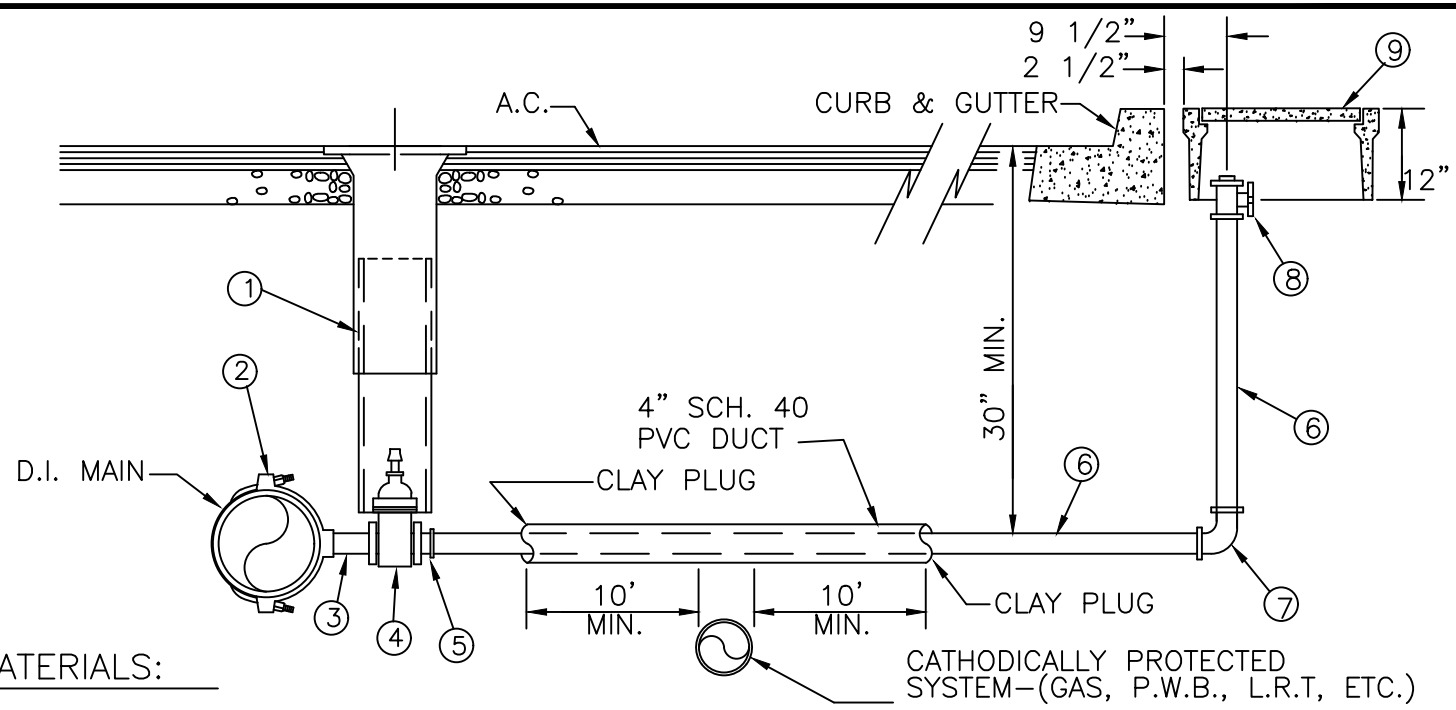
COMMUNITY DEVELOPMENT
CITY OF SCAPPOOSE
34485 E. COLUMBIA AVENUE, PO BOX "P", CITY OF SCAPPOOSE, OR. 97056

STANDARD 1" SERVICE

SCALE N.T.S.
DATE 2002
APPR.
DWG. NO. 403



MATERIALS:

1. "VANCOUVER" VALVE BOX, LID & 6" PVC EXTENSION (SEE STANDARD DETAIL. NO. 413)
2. PIPE O.D. x 2" TEE OR 2" F.I.P. SERVICE SADDLE (A.Y. McDONALD MFG. CO. MODEL 3826 OR APPROVED EQUAL)
3. 2" BRASS M.I.P. NIPPLE
4. 2" F.I.P. GATE VALVE (MUELLER NO. A–2369–8 OR APPROVED EQUAL)
5. 2" M.I.P. x COP. FLARE (MUELLER NO. H–15425, FORD NO. C28–77) OR MUELLER 110 COMPRESSION COUPLING (NO. H–15428)
6. 2" ASTM B–88 TYPE "K" RIGID COPPER TUBING. SOFT TEMPER REQ'D WITH FLARE FITTINGS.
7. 2" 90° BEND, COP. FLARE (MUELLER NO. H–15525 OR FORD NO. L22–77) OR MUELLER 110 COMPRESSION (NO. H–15526)
8. 1 1/2" – 2" ANGLE METER STOP, MUELLER NO. H–14276 (FLARE) OR H–14277 (110 COMPRESSION) OR FORD NO. FV23–777W (FLARE)
9. OLDCASTLE METER BOX, BODY NO. 38 (1 1/2"), OR 65 (2"), LID & COVER NO. 38–S (1 1/2"), OR 65–DPRL (2")

NOTES:

1. SUBSITUTES FOR ANY MATERIALS SHOWN SHALL BE APPROVED BY THE CITY ENGINEER.
2. ALL PIPE AND STRUCTURE ZONES SHALL BE BACKFILLED USING 3/4" MINUS CRUSHED AGG. AND COMPACTED TO 95% MAX. DENSITY AS DETERMINED BY AASHTO T–180.
3. WHEN AN ACTIVE CATHODIC PROTECTION SYSTEM IS ENCOUNTERED, SCH. 40 PVC SHALL BE INSTALLED WITH AN IMPERVIOUS PLUG, AS SHOWN.
4. METER BOX SHALL BE CENTERED OVER THE COMPLETED METER AND FITTING ASSEMBLY.
5. CUSTOMER SHALL INSTALL AN APPROVED BACKFLOW PREVENTION ASSEMBLY AT RIGHT–OF–WAY.
6. ANGLE METER STOP SHALL BE PERPENDICULR TO CURB LINE.

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DIV.
REV. DATE APPR.

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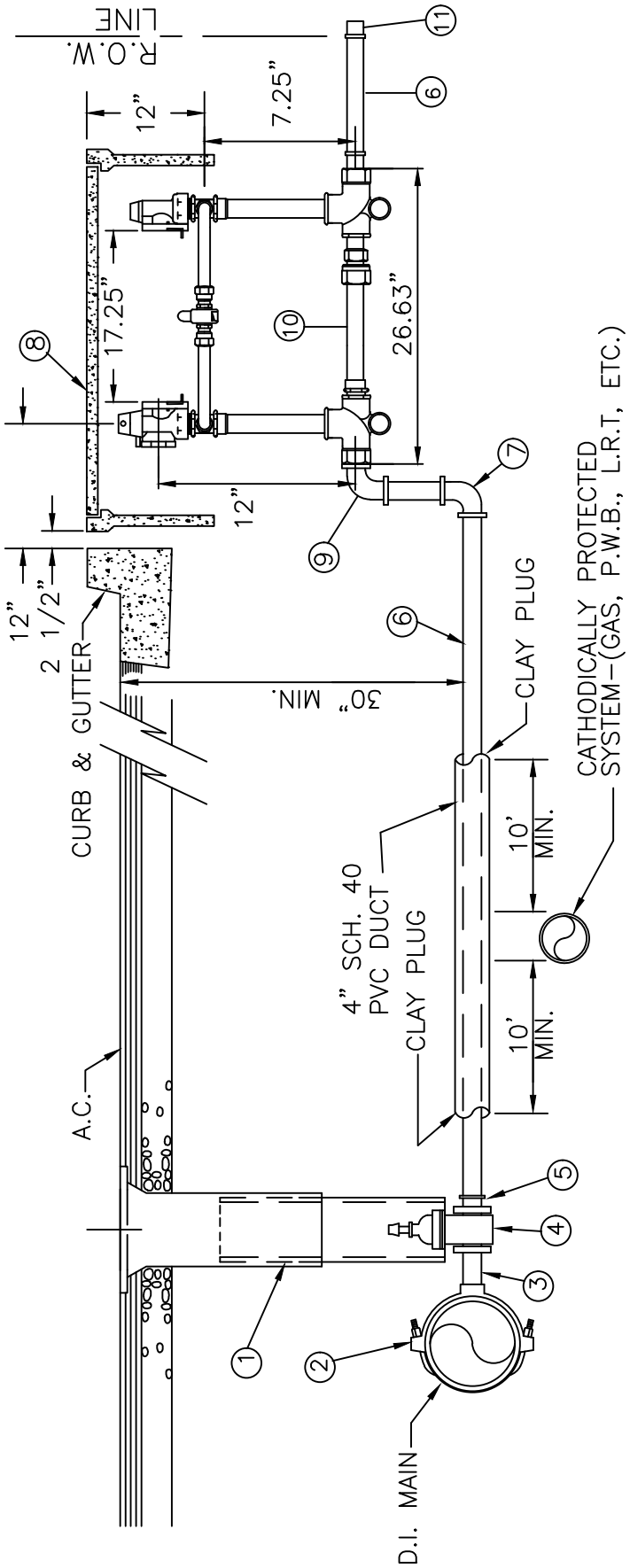
DEPT

COMMUNITY DEVELOPMENT
CITY OF SCAPPOOSE
34485 E. COLUMBIA AVENUE, PO BOX "P", CITY OF SCAPPOOSE, OR. 97056

STANDARD 2" SERVICE IRRIGATION (1–1/2"–2" METER)

SCALE N.T.S.
DATE 2002
APPR.
DWG. NO. 404A



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COMMUNITY DEVELOPMENT

CITY OF SCAPPOOSE

34485 E. COLUMBIA AVENUE, PO BOX "P", CITY OF SCAPPOOSE, OR. 97056

STANDARD 2" SERVICE-- DOMESTIC

WITH OR W/O IRRIGATION (1-1/2" - 2" METER

SCALE	N.T.S.
DATE	2002
APPR.	
DWG. NO.	404B

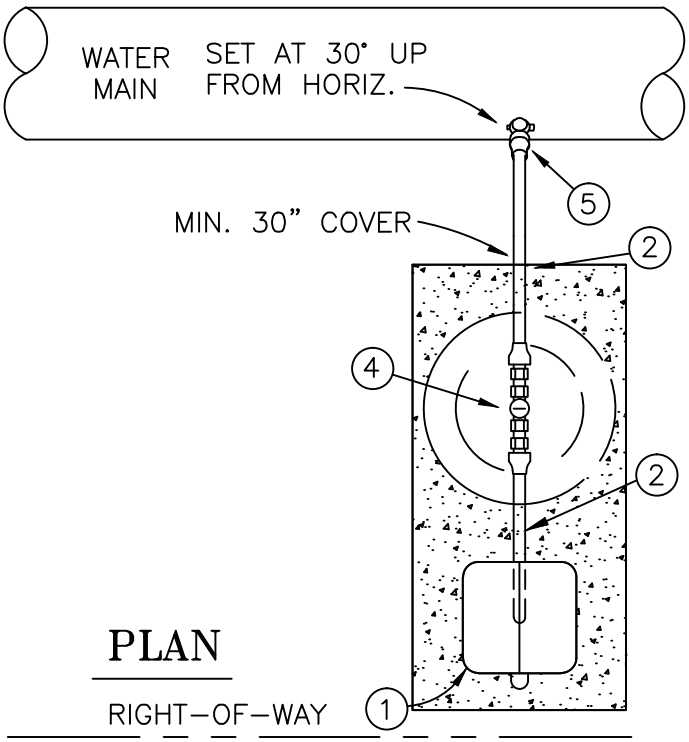
MATERIALS:

1. "VANCOUVER" VALVE BOX, LID & 6" PVC EXTENSION (SEE STANDARD DETAIL NO. 413)
2. PIPE O.D. x 2" TEE OR 2" F.I.P. SERVICE SADDLE (A.Y. McDONALD MFG. CO. MODEL3826 OR APPROVED EQUAL)
3. 2" BRASS M.I.P. NIPPLE
4. 2" F.I.P. GATE VALVE (MUELLER NO. A–2369–8 OR APPROVED EQUAL)
5. 2" M.I.P. x COP. FLARE (MUELLER NO. H–15425, FORD NO. C28–77) OR MUELLER 110 COMPRESSION COUPLING (NO. H–15428)
6. 2" ASTM B–88 TYPE "K" RIGID COPPER TUBING. SOFT TEMPER REQ'D WITH FLARE FITTINGS.
7. 2" 90ø BEND, COP. FLARE (MUELLER NO. 525 OR FORD NO. L22–77) OR MUELLER 110 COMPRESSION (NO. H–15526)
8. OLDCASTLE METER BOX, BODY NO. 38 (1 1/2"), OR 65 (2"), LID & COVER NO. 38–S (1 1/2"), OR 65–DPRL (2")
9. 2" 90° BEND, COMP. x M.I.P. (MUELLER H–15531)
10. 2" METER YOKE (SETTER) (MUELLER NO. B–2423–99000)
11. 2" COMP. x F.I.P. (MUELLER H–15451) W/PVC PLUG

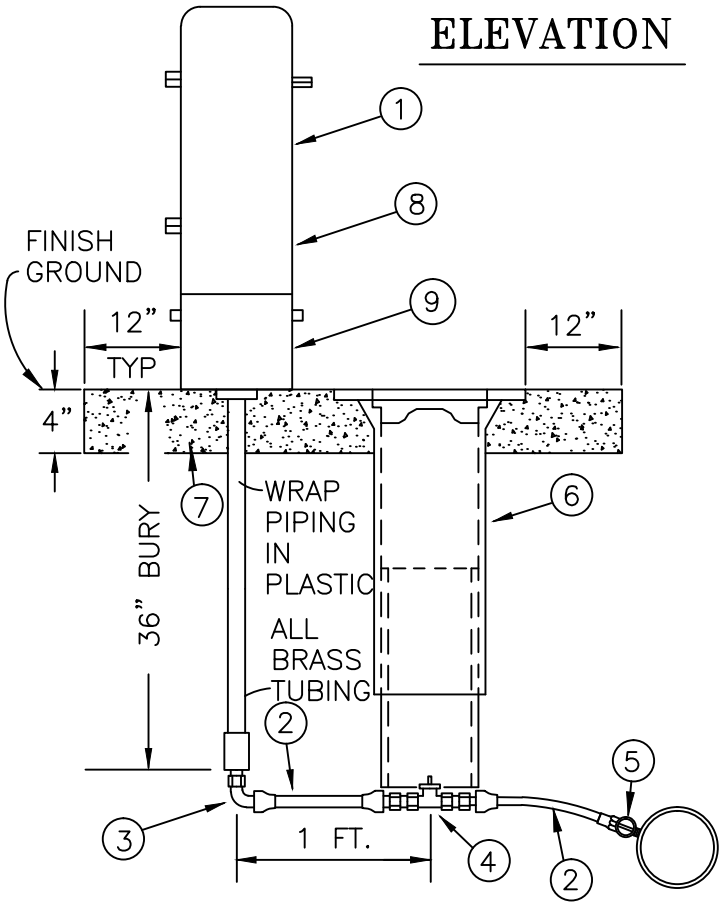
NOTES:

1. SUBSTITUTES FOR ANY MATERIALS SHOWN SHALL BE APPROVED BY THE CITY ENGINEER.
2. ALL PIPE AND STRUCTURE ZONES SHALL BE BACKFILLED USING 3/4" MINUS CRUSHED AGG. AND COMPACTED TO 95% MAX. DENSITY AS DETERMINED BY AASHTO T–180.
3. WHEN AN ACTIVE CATHODIC PROTECTION SYSTEM IS ENCOUNTERED, SCH. 40 PVC SHALL BE INSTALLED WITH AN IMPERVIOUS PLUG, AS SHOWN.
4. METER BOX SHALL BE CENTERED OVER THE COMPLETED METER AND FITTING ASSEMBLY.
5. CUSTOMER SHALL INSTALL AN APPROVED BACKFLOW PREVENTION ASSEMBLY AT RIGHT–OF–WAY.
6. METER SETTER SHALL BE PERPENDICULAR TO CURB LINE.

DRAWN	DRAWN		COMMUNITY DEVELOPMENT CITY OF SCAPPOOSE 34485 E. COLUMBIA AVENUE, PO BOX "P", CITY OF SCAPPOOSE, OR. 97056 STANDARD 2" SERVICE-- DOMESTIC WITH OR W/O IRRIGATION (1-1/2"-2" METER)	SCALE N.T.S.
DIV.	DEPT			DATE 2002
REV.	DATE	APPR.		APPR.
				DWG. NO. 404C



PLAN



MATERIALS

1. ECLIPSE NO. 88 SAMPLING STATION WITH THREADED OUTLET NOZZLE AND BRASS STANDPIPE (KUPFERLE FOUNDRY).
2. 3/4" TYPE 'K' SOFT TEMPER COPPER TUBING.
3. 3/4" MIP x COP. FLARE 1/4 BEND, MUELLER H-15530 (FLARE), H-15531 (110 COMPRESSION), OR FORD L28-33 (FLARE).
4. 3/4" FIP BALL VALVE, MUELLER (110 COMPRESSION) B-25209, OR FORD B22-333W (FLARE).
5. 3/4" CORP. STOP, MUELLER H-15000 (FLARE), H-15008 (110 COMPRESSION), OR FORD F600 (FLARE).
6. STD. 'VANCOUVER' VALVE BOX.
7. CONCRETE PAD 4" THK., 46" LG BY 31" WIDE
8. PAINT TOP WITH SHERWIN WILLIAMS GCC-5033 (BLUE).
9. PAINT BASE WITH SHERWIN WILLIAMS INDUSTRIAL ENAMEL PURE WHITE.

NOTES

1. ALL PIPE AND STRUCTURES SHALL BE BACKFILLED WITH 3/4"-0" CRUSHED ROCK COMPACTED TO MIN. 95% OF MAX. DENSITY PER AASHTO T-180.
2. SET STATION AT LOT LINE.
3. WHEN CROSSING CATHODICALLY PROTECTED SYSTEM, INSTALL PVC SLEEVE PER STD. DETAIL 403.

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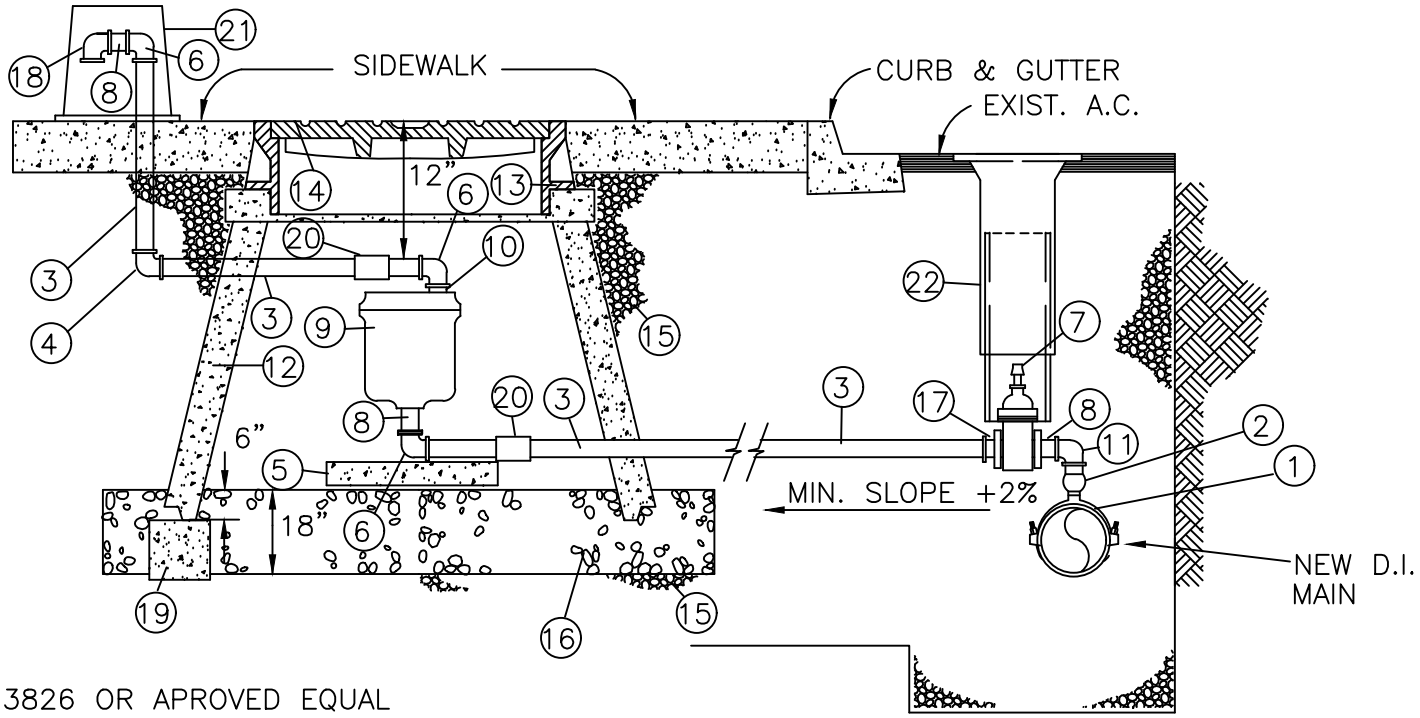
COMMUNITY DEVELOPMENT
CITY OF SCAPPOOSE
34485 E. COLUMBIA AVENUE, PO BOX "P", CITY OF SCAPPOOSE, OR. 97056

STANDARD WATER SAMPLING STATION

SCALE	N.T.S.
DATE	2002
APPR.	
DWG. NO.	405



MATERIALS:

1. A.Y. McDONALD MDL.3826 OR APROVED EQUAL
2. 2" M.I.P. CORP. STOP
3. 2" ASTM B-88 RIGID COPPER
4. 2" BRASS 1/4 BEND (FLARE x FLARE OR MUELLER 110 CTS)
5. 12"x12"x4" CONCRETE BLOCK
6. 2" BRASS 1/4 BEND (F.I.P. x FLARE), OR (F.I.P. x MUELLER 110 COMPRESION)
7. 2" R.W. F.I.P. GATE VALVE
8. 2" x 3" BRASS M.I.P. NIPPLE
9. 2" COMBINATION AIR VALVE (VAL-MATIC #202C OR APCO #145C-2)
10. 2" x 1 1/2" BRASS M.I.P. NIPPLE
11. 2" F.I.P. BRASS 1/4 BEND
12. STD. 48" CONCRETE MANHOLE CONE
13. VALLEY IRON & STEEL FRAME #106, 108 OR APPD. EQUAL.
14. VALLEY IRON & STEEL FRAME #105, 107 OR APPD. EQUAL.
15. 3/4" MINUS CRUSHED AGG.
16. 1 1/2" - 3/4" CLEAN DRAIN ROCK
17. 2" BRASS COUPLING (M.I.P. x FLARE OR MUELLER 110 COMPRESSION)
18. 2" M.I.P. BRASS 1/4 BEND WITH SCREEN ON OUTLET
19. 3 EA. CONCRETE BLOCKS
20. 2" UNION (FLARE OR MUELLER 110 COMPRESSION)
21. "HOT BOX" (EZBOX #EZ75)
22. "VANCOUVER" STYLE VALVE BOX. SEE STANDARD DETAIL DRAWING 413.

NOTES:

1. INSTALLATION LOCATED AT HIGH POINT OF MAIN.
2. 48" MANHOLE BARREL SECTIONS SHALL BE USED TO INCREASE DEPTH IF NECESSARY.
3. ALL PIPE AND STRUCTURE ZONES SHALL BE COMPACTED TO 95% OF MAX. DENSITY AS DETERMINED BY AASHTO T-180 OR AS SPECIFIED IN THE CONTRACT DOCUMENTS.
4. DETAIL NOT FOR SHALLOW INSTALLATIONS. INSTALLATIONS FOR WATERLINES WITH LESS THAN 36" OF COVER SHALL BE INDIVIDUALLY DESIGNED BY THE ENGINEER.
5. GROUT ALL AREAS WHERE COPPER PASSES THROUGH MANHOLE CONE
6. PLACE "HOT BOX" AT BACK OF SIDEWALK IN UTILITY EASEMENT OR OBTAIN 5' x 5' WATER FACILITY EASEMENT.

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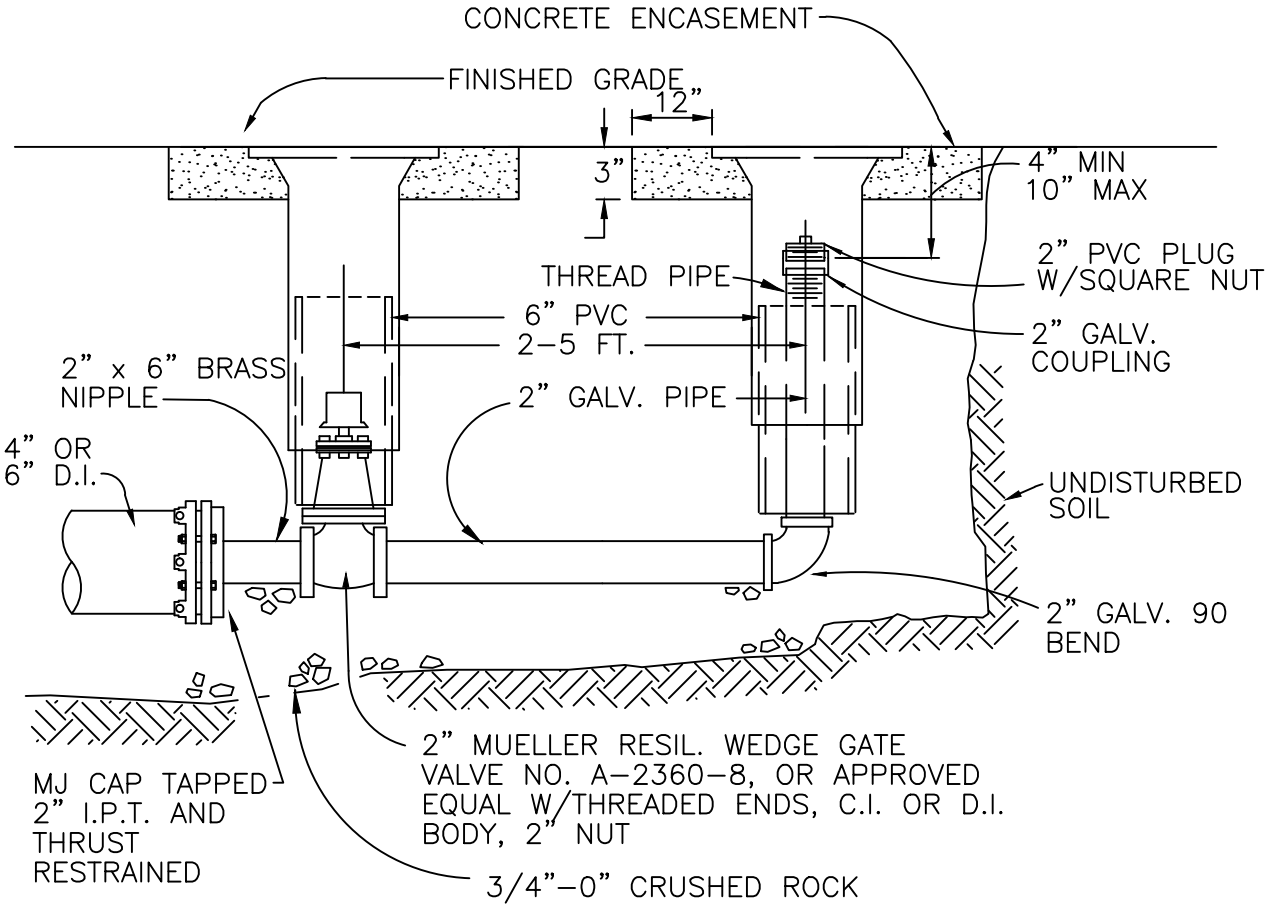
COMMUNITY DEVELOPMENT
CITY OF SCAPPOOSE
34485 E. COLUMBIA AVENUE, PO BOX "P", CITY OF SCAPPOOSE, OR. 97056

STANDARD COMBINATION AIR VALVE UNIT

SCALE N.T.S.
DATE 2002
APPR.
DWG. NO. 406



NOTES:

1. USE "VANCOUVER" STYLE VALVE BOXES, LIDS, & 6" PVC EXTENSION (SEE STANDARD DETAIL 413)
2. VALVE BOXES TO BE CONCRETE ENCASED AS SHOWN, IF NOT IN PAVED AREA.
3. BLOW-OFF UNIT SHALL BE BACKFILLED WITH 3/4"-0" CRUSHED ROCK AND COMPACTED TO 95% OF MAX. DENSITY AS DETERMINED BY AASHTO T-180.
4. PLACE BLOW-OFF STANDPIPE 3 FT. INSIDE R.O.W. LINE AT THE END OF STREET (2 FT. FROM BARRICADE).
5. 2" GALVANIZED TO BE ONE CONTINUOUS PIECE.
6. USE EBAA IRON "MEGALUG" ON MJ CAP. RESTRAIN A MIN. OF 70 L.F. OF PIPE PRIOR TO BLOW-OFF OR INSTALL A STRADDLE BLOCK.

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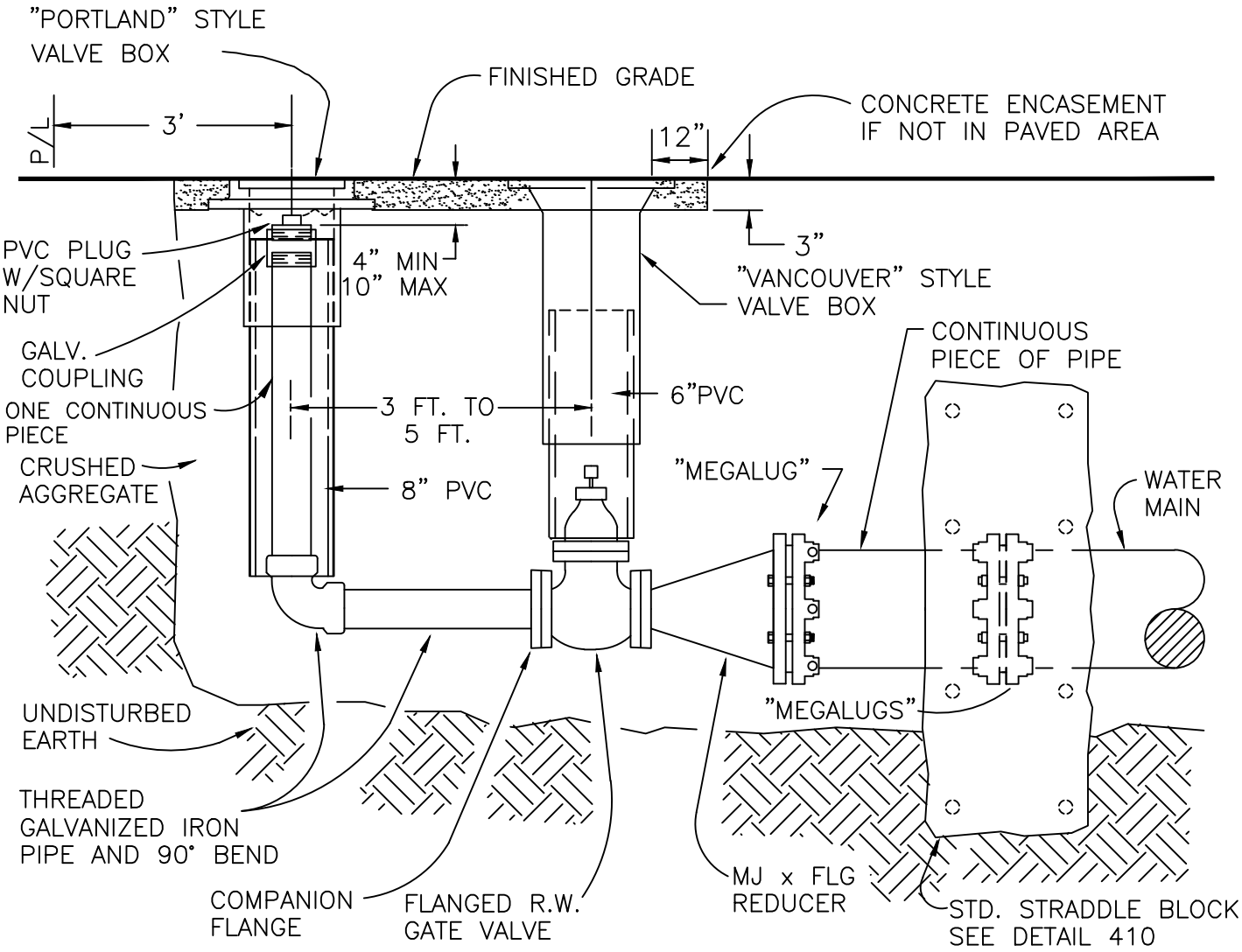
DIV.	DEPT		CITY OF SCAPPOOSE	DATE 2002
REV.	DATE	APPR.	34485 E. COLUMBIA AVENUE, PO BOX "P", CITY OF SCAPPOOSE, OR. 97056	APPR.
			STANDARD 2" BLOW-OFF ASSEMBLY FOR 4" AND 6" WATERLINES	DWG. NO. 407A

NOTES:

1. BACKFILL WITH SELECT CRUSHED AGGREGATE A MINIMUM OF 6" ON ALL SIDES.
2. ON TEMPORARY BLOW–OFFS ONLY, AN MJ CAP TAPPED 4" OR 6" MAY BE SUBSTITUTED FOR REDUCER.
3. TEMPORARY BLOW–OFF IS ONE REMOVED AT THE END OF PROJECT CONSTRUCTION. A PERMANENT BLOW–OFF REMAINS ON THE PROJECT AFTER ACCEPTANCE.
4. PLACE BLOW–OFF STANDPIPE 3 FT. INSIDE P/L. LINE AT END OF STREET (2 FT. FROM BARRICADE).
5. USE "VANCOUVER" STYLE VALVE BOX, LID, AND 6" PVC EXTENSION FOR BLOW–OFF VALVE. USE "PORTLAND" STYLE VALVE BOX, LID, AND 8" PVC EXTENSION FOR BLOW–OFF STAND PIPE (SEE DETAILS 413 & 414)

BLOW–OFF SIZES REQUIRED	
MAIN SIZE	BLOW–OFF SIZE
4" TO 6"	2"
8" TO 12"	4"
14" TO 18"	6"
20" & UP	PER ENGR.



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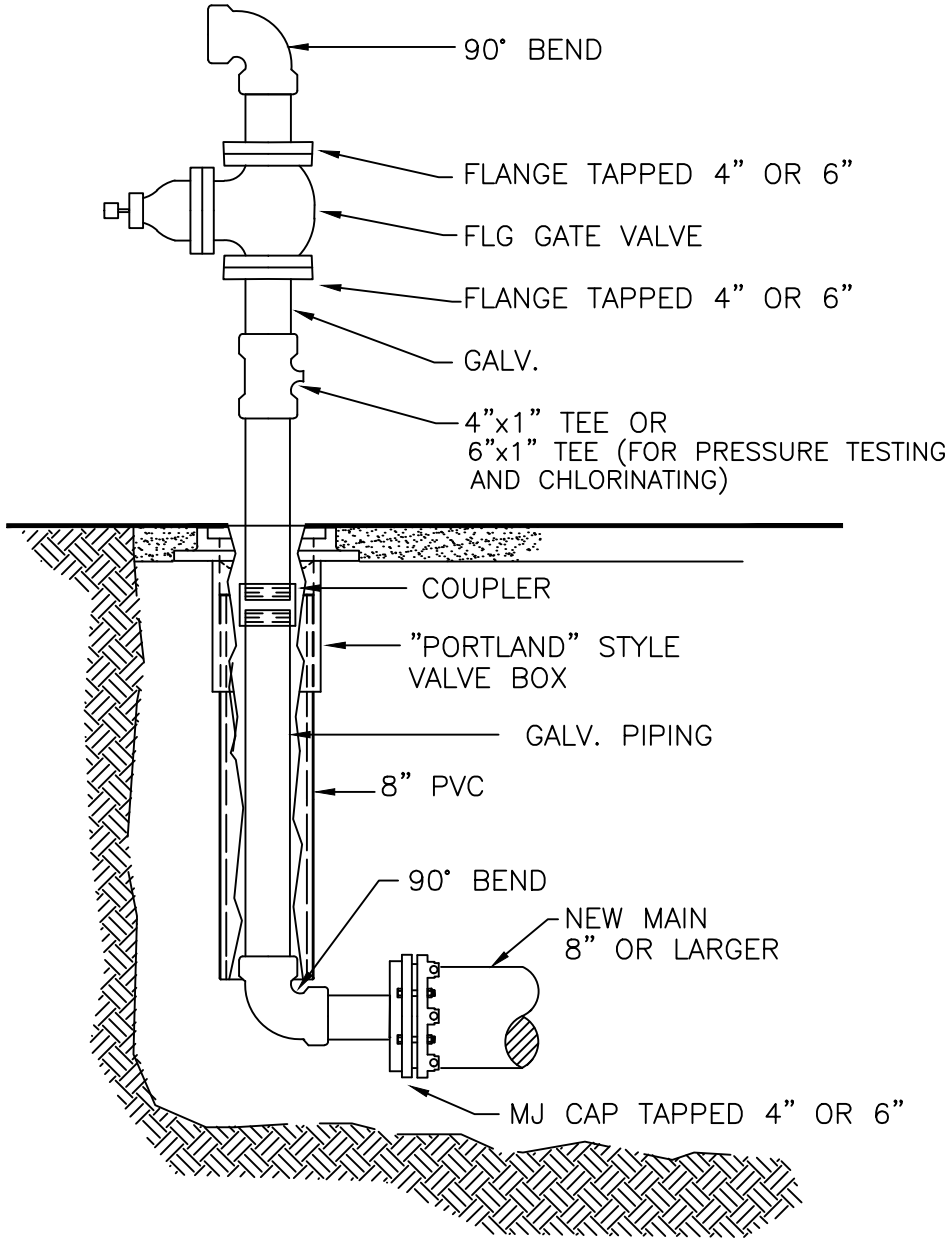
DIV.	DEPT	
REV.	DATE	APPR.

COMMUNITY DEVELOPMENT
CITY OF SCAPPOOSE
34485 E. COLUMBIA AVENUE, PO BOX "P", CITY OF SCAPPOOSE, OR. 97056

PERMANENT OR TEMPORARY 4" AND 6" BLOW–OFF

SCALE	N.T.S.
DATE	2002
APPR.	
DWG. NO.	407B



NOTES:

1. ALL FILLING, FLUSHING, AND TESTING OF NEW WATERLINE FACILITIES SHALL BE DONE THROUGH A 6" DOUBLE CHECK ASSEMBLY WITH A METERING DEVICE.

2. PROVIDE TEMPORARY BLOCKING AS REQUIRED.

3. ALL PIPING AND FITTINGS SHALL BE GALVANIZED IRON.

4. FOR 8"–12" WATERLINES: FILL POINT SHALL BE 4" PIPING AND FITTINGS. FOR 14"–18" WATERLINES: FILL POINT SHALL BE 6" PIPING AND FITTINGS. FOR 20" AND LARGER: FILL POINT SHALL SIZED AS DETERMINED BY THE ENGINEER.

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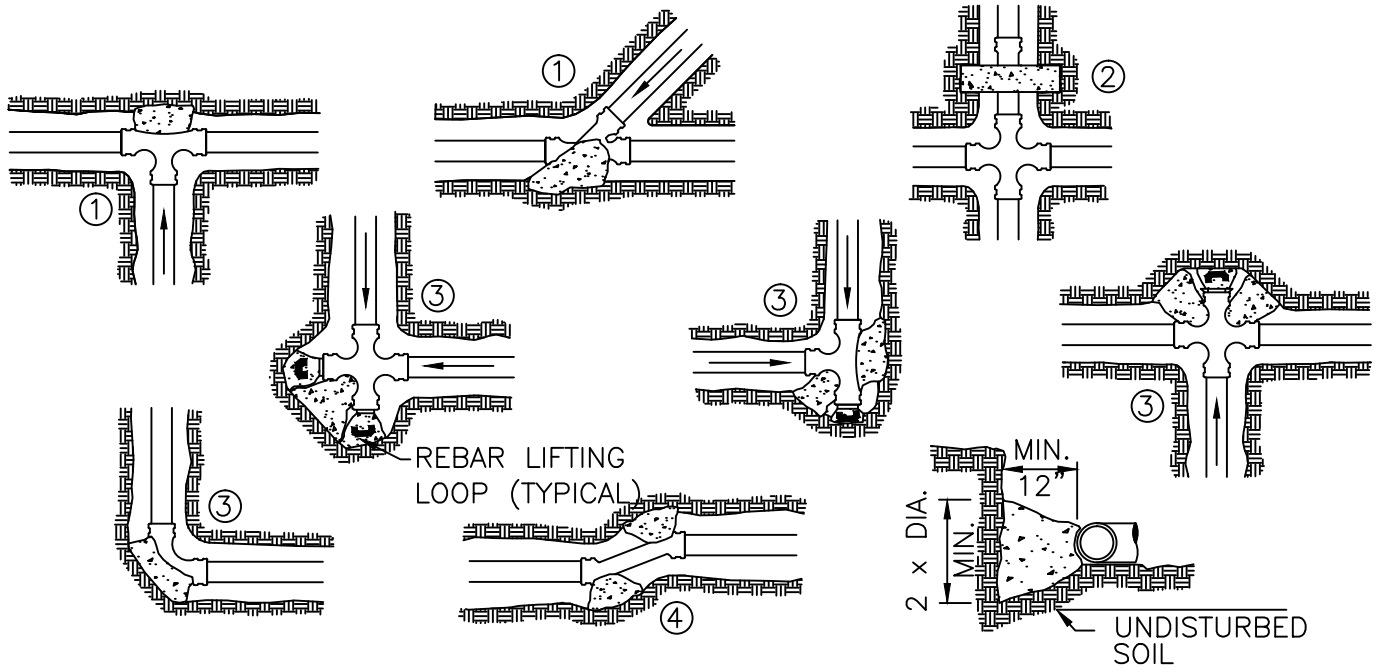
REV.	DATE	APPR.		APPR.
			STANDARD 4" AND 6" TEMPORARY FILL POINT	DWG. NO. 407C

FITTING SIZE (Inches)	TEE,& WYE ①	STRADDLE BLOCK ②	90° BEND ③ PLUGGED CROSS TEE PLUGGED–RUNS	45° BEND ④	22 1/2° BEND ④	11 1/4° BEND ④
2	*	*	*	*	*	*
4	1.7	2.1	2.4	1.3	*	*
6	3.7	4.9	5.3	2.9	1.5	*
8	6.7	8.7	9.5	5.1	2.7	1.3
10	10.5	13.6	14.8	8	4.1	2
12	15.1	19.6	21.3	11.6	5.9	2.9
16	26.8	34.8	37.9	20.5	10.4	5.2
18	33.9	44	47.9	25.9	12.8	6.7
LARGER	* *	* *	* *	* *	* *	* *
BEARING AREA OF THRUST BLOCKS (sq. ft.)						

1. ALL VALUES ARE BASED ON THE FOLLOWING ASSUMPTIONS: AVG. PRESSURE = 100 PSI x 2 (safety factor); 1500 PSF SOIL BEARING CAPACITY; NORMAL DISTRBUTION DESIGN VELOCITY NOT TO EXCEED 5 F/S.
2. ALL FITTINGS SHALL BE WRAPPED IN PLASTIC PRIOR TO PLACEMENT OF CONCRETE.
3. ALL THRUST BLOCKS SHALL BE FORMED TO ELIMINATE ANY CONCRETE AROUND FITTING BOLTS.
4. BEARING SURFACE OF THRUST BLOCKING SHALL BE AGAINST UNDISTURBED SOIL.
5. ALL CONCRETE MIX SHALL HAVE A MIN. 28 DAY STRENGTH OF 3000 PSI.
6. ALL PIPE ZONES SHALL BE GRAVEL FILLED AND COMPACTED.
7. THRUST BLOCKS FOR PLUGGED CROSS AND PLUGGED TEE SHALL HAVE #4 REBAR LIFTING LOOPS INSTALLED AS SHOWN.
8. VERTICAL THRUST DETAILS – SEE DWG. #409
9. STRADDLE BLOCK DETAILS – SEE DWG. #410.

* BLOCK TO UNDISTURBED TRENCH WALLS

* * THRUST BLOCKS FOR PIPES LARGER THAN 18" WILL BE INDIVIDUALLY DESIGNED BY THE ENGINEER.



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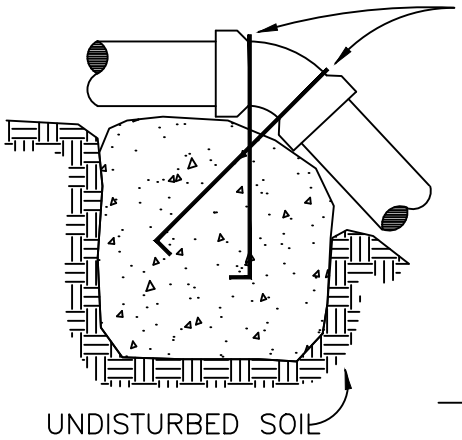
COMMUNITY DEVELOPMENT
CITY OF SCAPPOOSE
34485 E. COLUMBIA AVENUE, PO BOX "P", CITY OF SCAPPOOSE, OR. 97056

HORIZONTAL THRUST BLOCKING

SCALE	N.T.S.
DATE	2002
APPR.	
DWG. NO.	408

NOTES:

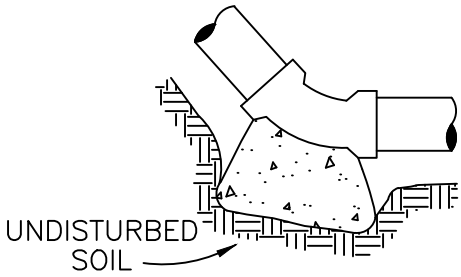
1. GRAVITY VERTICAL THRUST BLOCKS VALUES SHALL BE REVIEWED BY THE ENGINEER.
2. KEEP CONCRETE CLEAR OF JOINT AND JOINT ACCESSORIES. FITTINGS SHALL BE WRAPPED IN PLASTIC PRIOR TO PLACEMENT OF CONCRETE.
3. CONCRETE THRUST BLOCKING SHALL BE POURED AGAINST UNDISTURBED EARTH.
4. CONCRETE MIX SHALL HAVE A MIN. 28 DAY STRENGTH OF 3000 P.S.I.
5. GRAVITY THRUST BLOCK VOLUMES FOR VERTICAL BENDS HAVING UPWARD RESULTANT THRUSTS ARE BASED ON TEST PRESSURE OF 150 P.S.I.G. AND THE WEIGHT OF CONCRETE = 4050 LBS./CU.YD.
6. VERTICAL BENDS THAT REQUIRE A GRAVITY THRUST BLOCK VOLUME EXCEEDING 5 CUBIC YARDS REQUIRE SPECIAL BLOCKING DETAILS DESIGNED BY THE ENGINEER. NOTE VOLUMNS SHOWN INSIDE HEAVY LINE IN TABLE.
7. PAYMENT SHALL BE THE SAME AS FOR HORIZONTAL THRUST BLOCKS.
8. ALL REBAR SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM–123 (MIN. 3.4 MIL). REBAR SHALL BE BENT BEFORE GALVANIZATION, AND LAST 4" OF BAR SHALL BE BENT 90 DEGREES WITH A 1/2" RADIUS BEND. REBAR SHALL BE TIGHTLY FIT TO RESTRAINED FITTING.
9. FOR HORIZONTAL THRUST BLOCK DETAILS SEE DETAIL NO. 408.



PROFILE

GRAVITY VERTICAL THRUST BLOCK

SIZED LIKE HORIZONTAL THRUST BLOCKS



PROFILE

NORMAL VERTICAL THRUST BLOCK

VOLUME OF GRAVITY THRUST BLOCK IN CUBIC YARDS (VERTICAL BENDS)			
FITTING SIZE	BEND ANGLE		
	45 °	22 1/2°	11 1/4 °
4	1.1	0.4	0.2
6	2.7	1.0	0.4
8	4.0	1.5	0.6
10	6.0	2.3	0.9
12	8.5	3.2	1.3
14	11.5	4.3	1.8
16	14.8	5.6	2.3

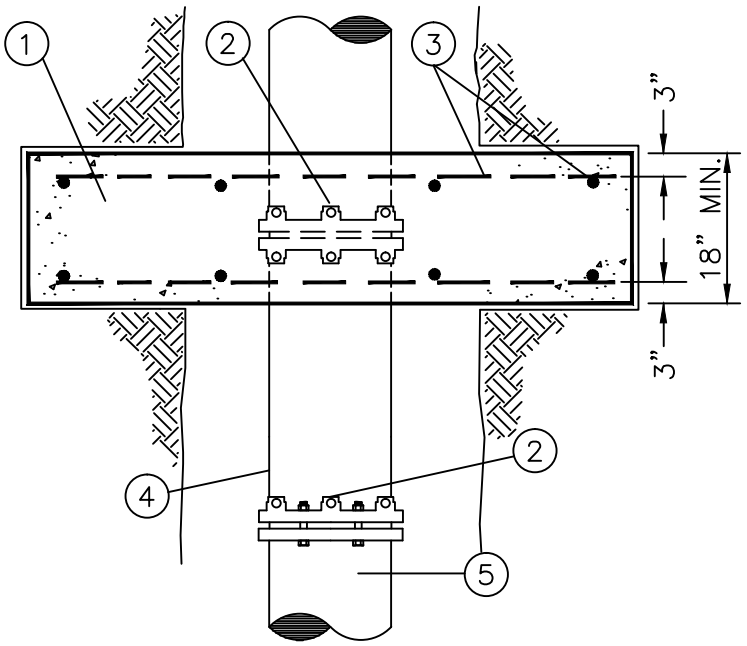
FITTING SIZE	ROD SIZE	EMBED–MENT
12" AND LESS	#6	30"
14" – 16"	#8	36"

DRAWN	DRAWN	
DIV.	DEPT	
REV.	DATE	APPR.

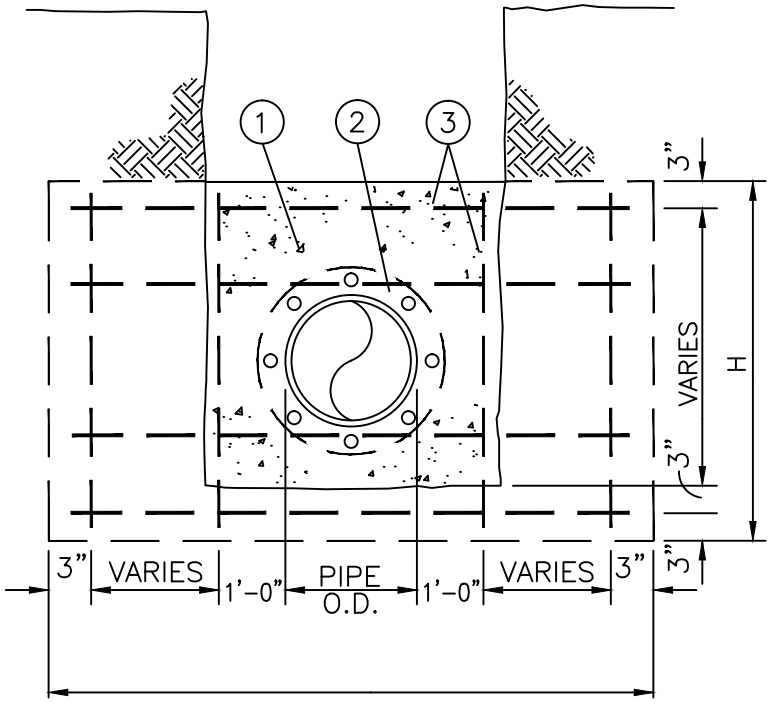
COMMUNITY DEVELOPMENT
CITY OF SCAPPOOSE
34485 E. COLUMBIA AVENUE, PO BOX "P", CITY OF SCAPPOOSE, OR. 97056

VERTICAL THRUST BLOCKING

SCALE N.T.S.
DATE 2002
APPR.
DWG. NO. 409



TOP VIEW



FRONT VIEW

MATERIALS:

1. CONCRETE STRADDLE BLOCK.
2. 2–EBAA IRON "MEGALUG" FOLLOWER GLANDS
3. #4 REBAR EACH WAY, 12" O/C.
4. NO JOINTS ALLOWED BETWEEN STRADDLE BLOCK AND FITTING/ BLOW–OFF ASSEMBLY.
5. FITTING/BLOW–OFF ASSEMBLY

NOTES:

1. STRADDLE BLOCKS HEIGHT AND WIDTH SHALL BE DESIGNED INDIVIDUALLY BY THE ENGINEER AND SHALL BE BASED ON THE FOLLOWING:
   a.) 200 PSI WATER PRESSURE
   b.) SOIL BRG. CAPACITY
   c.) STEEL SIZE AND SPACING
2. BEARING AREA OF BLOCK SHALL BE AGAINST UNDISTURBED SOIL.
3. STRADDLE BLOCK SHALL HAVE A MINIMUM OF 18" COVER.
4. CONCRETE SHALL HAVE A MIN. 28–DAY STRENGTH OF 3000 PSI
5. ALL FITTINGS, & PIPE WITHIN THE CONC. SHALL BE WRAPPED IN 8 MIL. PLASTIC
6. STRADDLE BLOCK HEIGHT (H) & WIDTH (W) SHALL BE DETERMINED BY THE ENGINEER.

DRAWN	DRAWN	
DIV.	DEPT	
REV.	DATE	APPR.

COMMUNITY DEVELOPMENT
CITY OF SCAPPOOSE
34485 E. COLUMBIA AVENUE, PO BOX "P", CITY OF SCAPPOOSE, OR. 97056

STANDARD STRADDLE BLOCK

SCALE	N.T.S.
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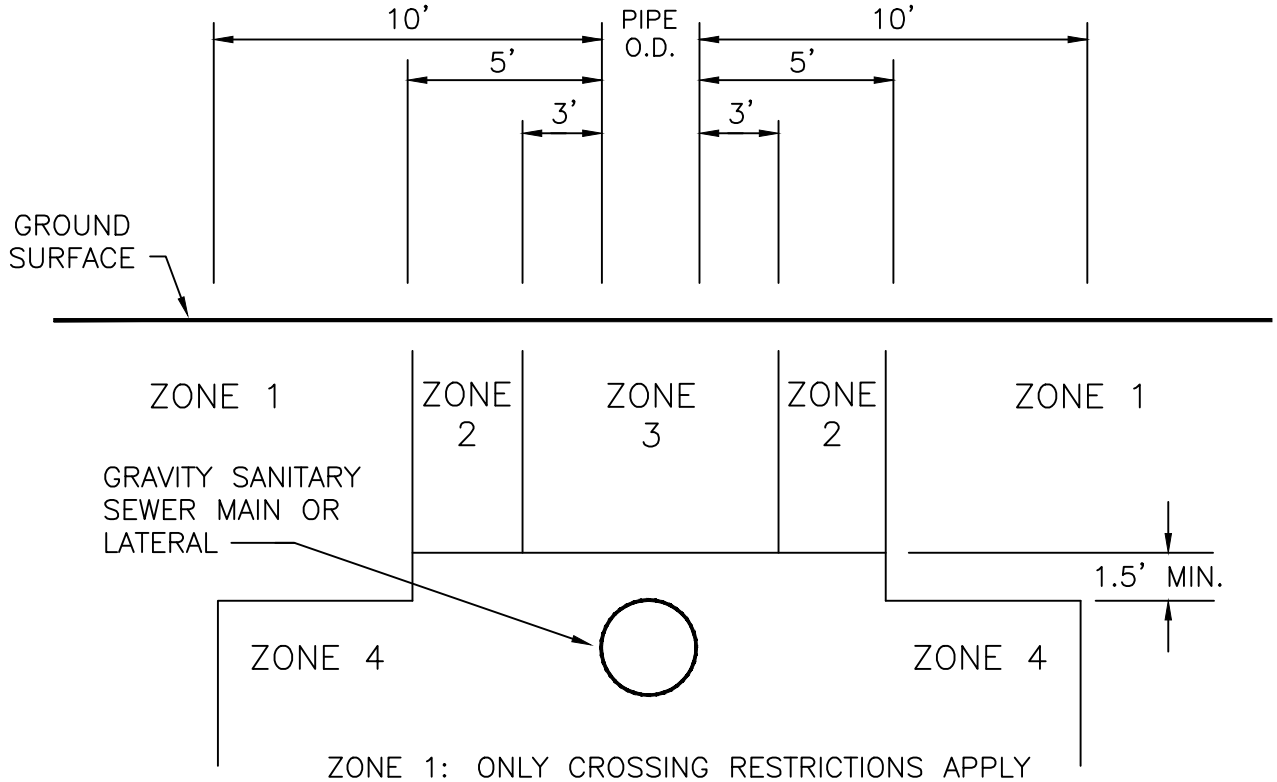

ZONE 1: ONLY CROSSING RESTRICTIONS APPLY

ZONE 2: CASE–BY CASE DETERMINATION

ZONE 3: PARALLEL WATERLINE PROHIBITED

ZONE 4: PARALLEL WATERLINE PROHIBITED

NOTES:

1. WHERE THE PROPOSED WATERLINE WILL BE INSTALLED PARALLEL TO AN EXISTING GRAVITY SANITARY SEWER MAIN OR LATERAL LINE, THE SEPERATION BETWEEN THE TWO SHALL BE AS INDICATED ABOVE.

2. CROSSING:

   a. WHENEVER POSSIBLE, THE BOTTOM OF THE WATERLINE SHALL BE 1.5 FEET ABOVE THE TOP OF THE SEWER LINE. ONE FULL LENGTH OF WATERLINE SHALL BE CENTERED AT THE CROSSING, REGARDLESS OF VERTICAL SEPARATION.

   b. WHERE IT IS NOT POSSIBLE FOR THE WATER LINE TO BE 1.5 FEET ABOVE THE SEWER LINE, OR THE WATERLINE PASSES UNDER THE SEWER LINE, THE EXISTING SEWER LINE SHALL BE EXPOSED FOR A DISTANCE OF 10 FEET ON EACH SIDE OF THE CROSSING, AND SHALL BE REPLACED WITH C–900 PVC, DR–18, DR–25 OR CLASS 50 DUCTILE IRON PIPE AS APPROVED BY THE ENGINEER, AND A LENGTH OF WATER PIPE SHALL BE CENTERED AT THE CROSSING, OR AS APPROVED BY THE ENGINEER.

3. SEPARATION FROM FORCE MAIN SANITARY SEWER SHALL BE REVIEWED ON A CASE–BY–CASE BASIS

DRAWN	DRAWN		COMMUNITY DEVELOPMENT CITY OF SCAPPOOSE 34485 E. COLUMBIA AVENUE, PO BOX "P", CITY OF SCAPPOOSE, OR. 97056 STANDARD GRAVITY SANITARY SEWER SEPERATION	SCALE N.T.S.
DIV.	DEPT			DATE 2002
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L E G E N D

EXISTING

- FIRE HYDRANT
- GATE VALVE
- BUTTERFLY VALVE W/Oper.
- WATER METER
- 6"C.I. — WATER MAIN
- THRUST BLOCK
- MJ PLUG ON TEE
- CABLE — UNDERGROUND TV CABLE
- PGE — UNDERGROUND POWER
- GTE — UNDERGROUND TELEPHONE
- 2"GAS — GAS MAIN W/VALVE
- POWER POLE W/GUY
- CULVERT
- MANHOLE
- 8" SAN — SANITARY SEWER
- 18" SD — STORM DRAIN
- SURVEY MONUMENT
- DITCH OR STREAM

PROPOSED

- FIRE HYDRANT
- GATE VALVE
- BUTTERFLY VALVE W/Oper.
- WATER METER
- 6" D.I. — WATER MAIN
- THRUST BLOCK
- STRADDLE BLOCK
- BLOW–OFF
- SAMPLE STATION

JOINTS and FITTINGS

- FLANGE JOINT (FLG)
- MECHANICAL JOINT
- BELL END OF PIPE
- FLANGED TEE
- 45 DEGREE BEND, MJ
- ADAPTER, FLG x MJ
- REDUCER, FLG
- MJ PLUG ON TEE
- MJ CAP
- BLIND FLANGE ON TEE
- SLEEVE OR COUPLING
- MECHANICAL JOINT W/"MEGALUG"
- RESTRAINED BELL JOINT

DRAWN	DRAWN	
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COMMUNITY DEVELOPMENT
CITY OF SCAPPOOSE
34485 E. COLUMBIA AVENUE, PO BOX "P", CITY OF SCAPPOOSE, OR. 97056

WATER PROJECT SYMBOLS

SCALE	N.T.S.
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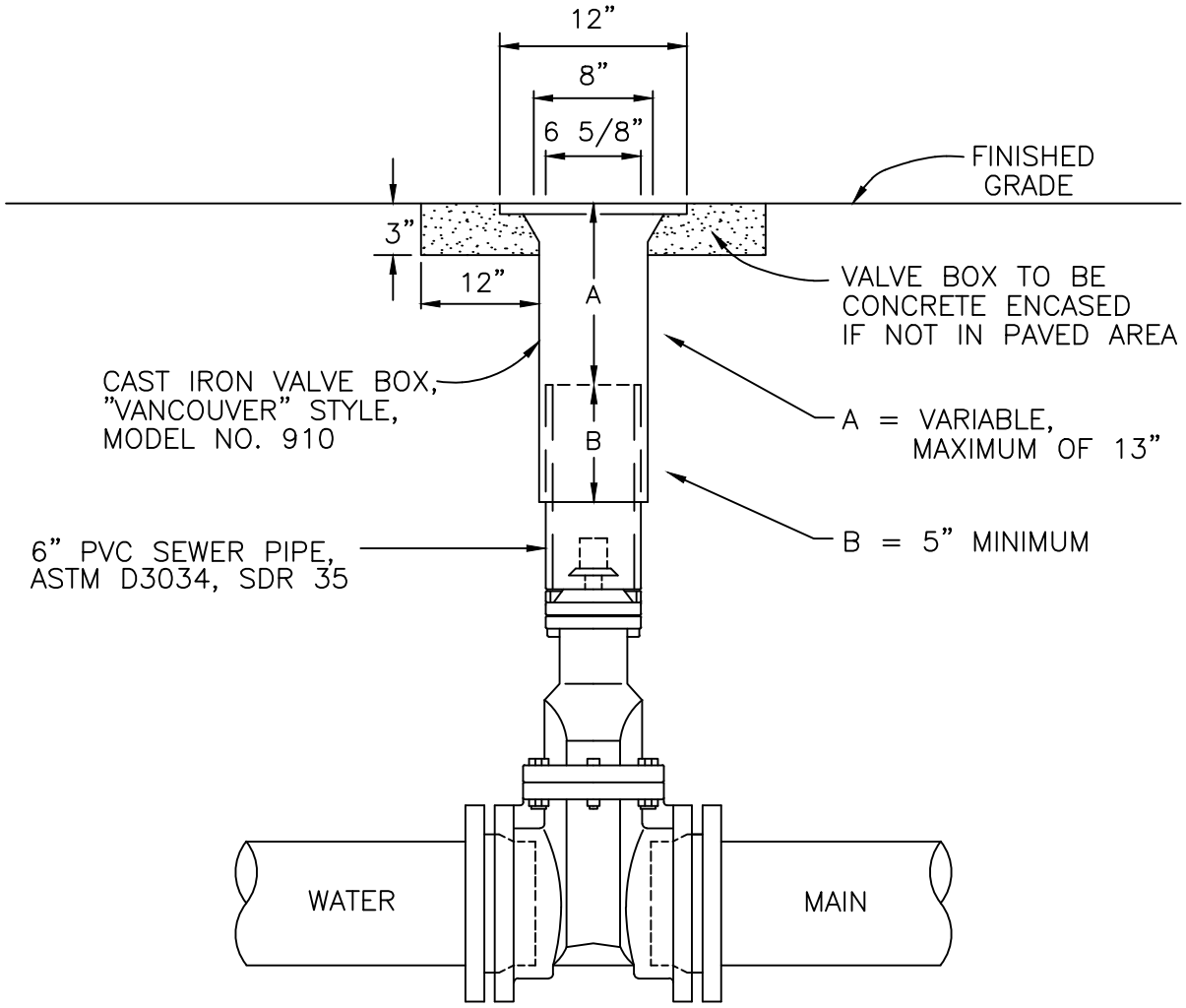
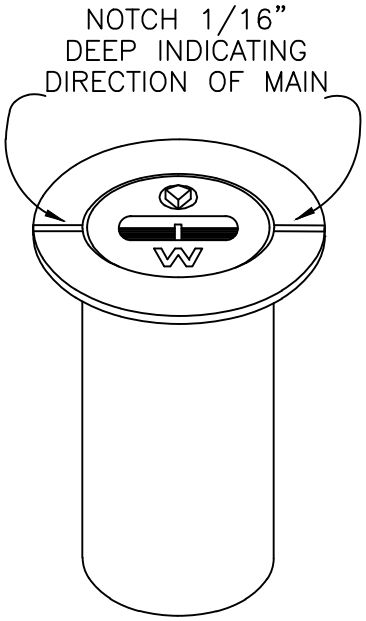


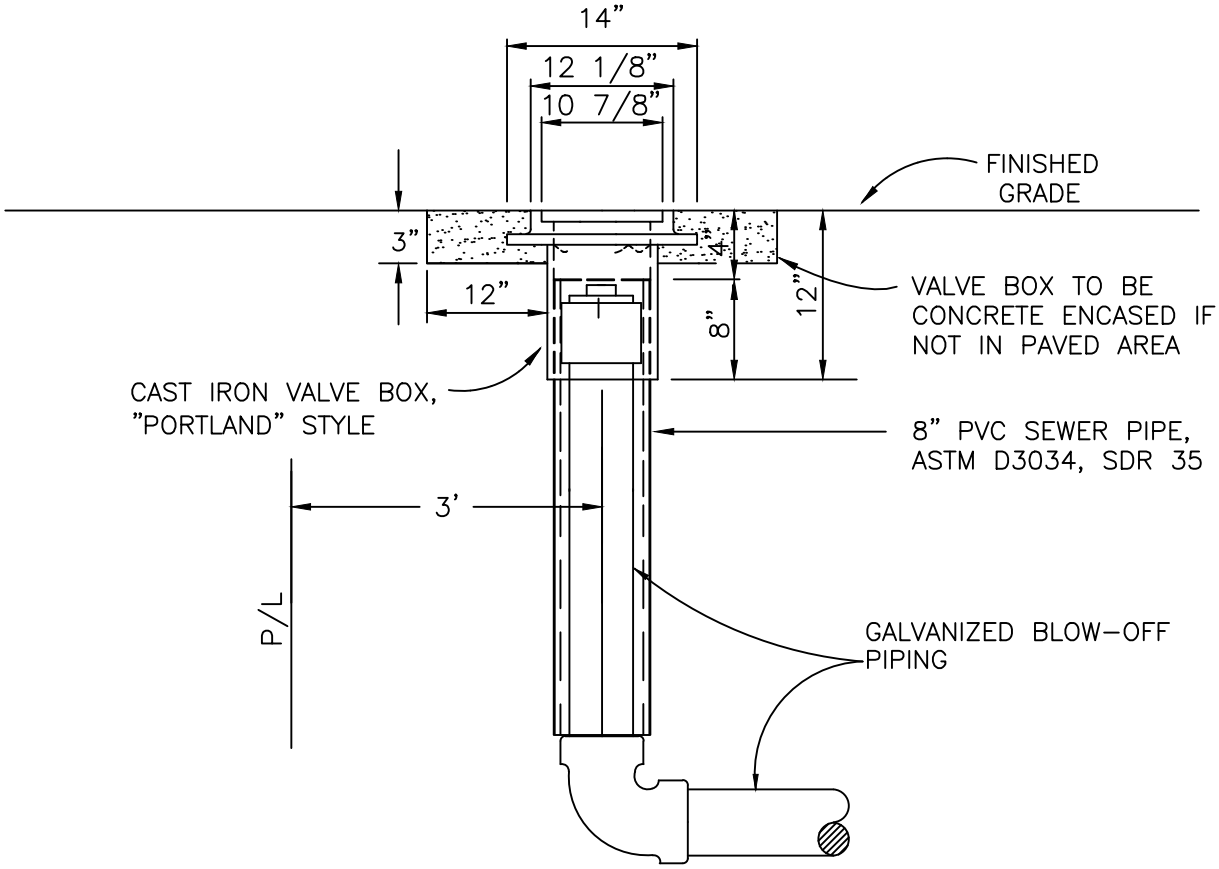


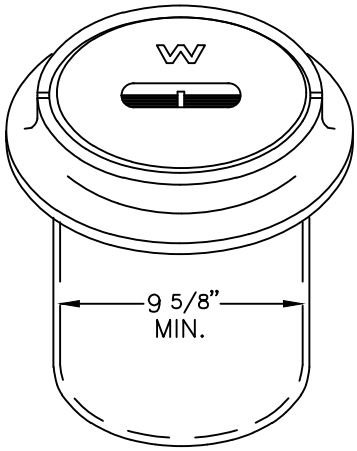
"VANCOUVER"
18" TALL VALVE BOX

NOTES:

1. VALVE BOXES SHALL BE CENTERED DIRECTLY OVER THE VALVE NUT IN A VERTICAL POSITION.
2. VALVE BOX TOP SHALL BE ADJUSTED TO MEET FINISHED GRADE.
3. PVC SHALL BE ON CONTINOUOUS PIECE – NO BELLS OR COUPLERS.
4. USE FOR ALL VALVES AND 2" BLOW–OFF STANDPIPES

DRAWN	DRAWN		COMMUNITY DEVELOPMENT CITY OF SCAPPOOSE 34485 E. COLUMBIA AVENUE, PO BOX "P", CITY OF SCAPPOOSE, OR. 97056 STANDARD VALVE BOX DETAIL	SCALE N.T.S.
DIV.	DEPT			DATE 2002
REV.	DATE	APPR.		APPR.
				DWG. NO. 413



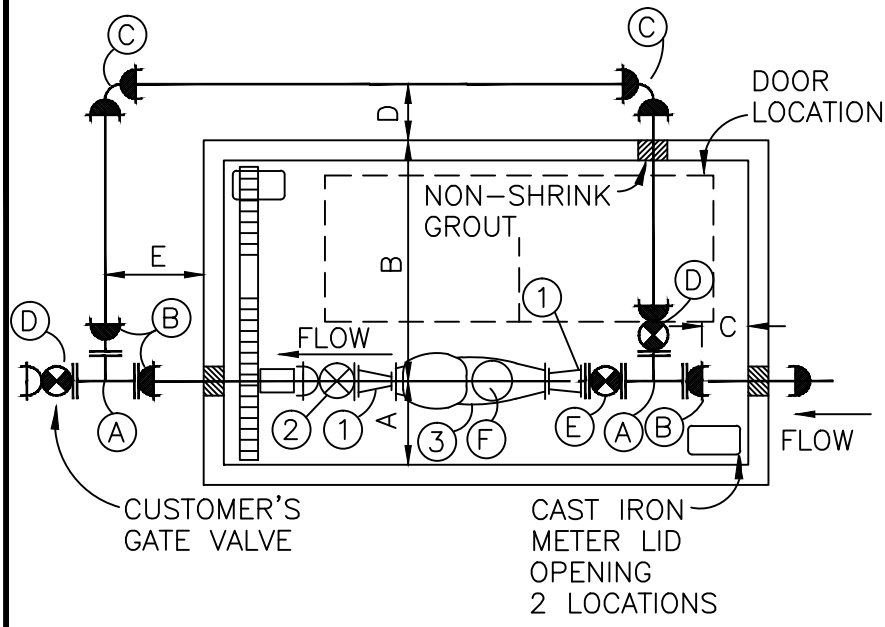


"PORTLAND" VALVE BOX

NOTES:

1. VALVE BOXES SHALL BE CENTERED DIRECTLY OVER THE STANDPIPE IN A VERTICAL POSITION.
2. VALVE BOX TOP SHALL BE ADJUSTED TO MEET FINISHED GRADE.
3. PVC SHALL BE ON CONTINUOUS PIECE-NO BELLS OR COUPLERS.
4. USE FOR 4" & 6" BLOW-OFF STANDPIPES AND FLUSH MOUNTED CATHODIC PROTECTION TEST STATIONS ONLY.

DRAWN	DRAWN		COMMUNITY DEVELOPMENT CITY OF SCAPPOOSE 34485 E. COLUMBIA AVENUE, PO BOX "P", CITY OF SCAPPOOSE, OR. 97056 STANDARD VALVE BOX DETAIL FOR BLOW-OFF STANDPIPE	SCALE N.T.S.
DIV.	DEPT			DATE 2002
REV.	DATE	APPR.		APPR.
				DWG. NO. 414



METER	3"
INCOMING LINE SIZE	4"
BY–PASS LINE SIZE	4"
UTILITY VAULT NO./LID NO.	687–LA/ 687–TL2–332P
A	24" MIN
B	36" MIN
C	6"MIN –12"MAX
D	24" MIN
E	24" MIN

FITTINGS & VALVES BY CONTRACTOR

(A) 4" FLG TEE

(B) 4" MJ x FLG ADAPTER

(C) 4" MJ 90° BEND

(D) 4" MJ x FLG R.W. GATE VALVE

(E) 4" FLG. R.W. GATE VALVE

(F) 4" FLG. x P.E. CONTINUOUS D.I. PIPE

FITTINGS, VALVES & METER BY CITY

(1) 4" x 3" FLG. REDUCER

(2) 4" x 3 " MJ x FLG R.W. GATE VALVE

(3) 3" HERSEY/MCT 2 COMPOUND METER

MECHANICAL JOINT WITH MEGALUG RETAINER GLAND

PIPE BELL WITH "FIELD–LOK" TYPE GASKET

ALL FITTINGS, VALVES AND PIPING SHALL BE INSTALLED LEVEL

DRAWN	DRAWN	
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COMMUNITY DEVELOPMENT
CITY OF SCAPPOOSE
34485 E. COLUMBIA AVENUE, PO BOX "P", CITY OF SCAPPOOSE, OR. 97056

STANDARD HERSEY MCT2
COMPOUND METER INSTALLATION – 3"

SCALE	N.T.S.
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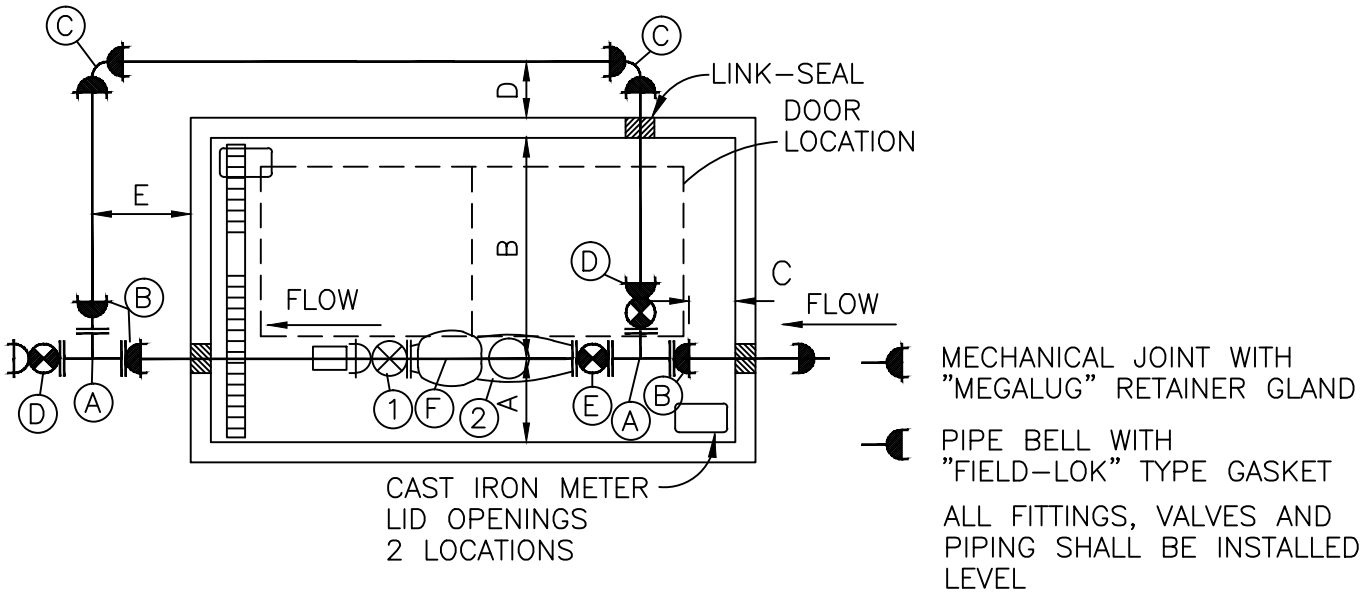
DWG. NO.	415A



METER	4"	6"
INCOMING LINE SIZE	4"	6"
BY–PASS LINE SIZE	4"	6"
UTILITY VAULT NO./LID NO.	687–LA/ 687–TL2–332P	5106–LA/ 5106–TL2–332P
A	24" MIN	24" MIN
B	36" MIN	36" MIN
C	6" MIN 12" MAX	6" MIN 12" MAX
D	24" MIN	24" MIN
E	24" MIN	24" MIN

FITTING & VALVES BY CONTRACTOR

- (A) 4" OR 6" FLG TEE
- (B) 4" OR 6" MJ x FLG ADAPTER
- (C) 4" OR 6" 90° BEND
- (D) 4" OR 6" MJ x FLG RW GATE VALVE
- (E) 4" OR 6" FLG RW GATE VALVE
- (F) 4" OR 6" FLG x P.E. CONTINUOUS D.I. PIPE

FITTING, VALVE, & METER BY CITY

- (1) 4" OR 6" MJ x FLG RW GATE VALVE
- (2) 4" OR 6" HERSEY MCT2 COMPOUND METER

DRAWN	DRAWN	
DIV.	DEPT	
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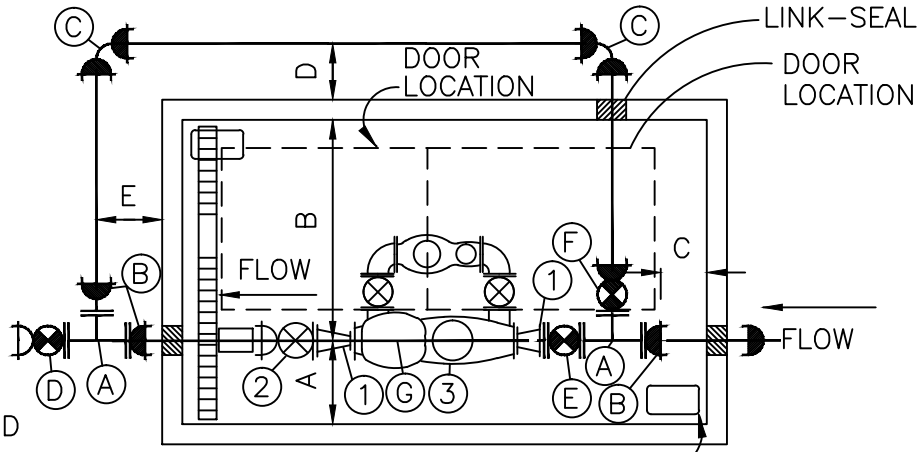
COMMUNITY DEVELOPMENT
CITY OF SCAPPOOSE
34485 E. COLUMBIA AVENUE, PO BOX "P", CITY OF SCAPPOOSE, OR. 97056

STANDARD HERSEY MCT2
COMPOUND METER INSTALLATION – 4" & 6"

SCALE	N.T.S.
DATE	2002
APPR.	
DWG. NO.	415B



MECHANICAL JOINT WITH "MEGALUG" RETAINER GLAND

PIPE BELL WITH "FIELD–LOK" TYPE GASKET

METER	4"x 2"	6"x 3"	8"x 4"
INCOMING LINE SIZE	6"	8"	10"
BY–PASS LINE SIZE	4"	4"	6"
UTILITY VAULT NO./LID NO.	810–LA/ 810–TL2–332P	712–LA/ 712–TL2–332P	816–LA/ 816–TL2–332P
A	24" MIN	24" MIN	24" MIN
B	36" MIN	36" MIN	36" MIN
C	6" MIN 12" MAX	6" MIN 12" MAX	6" MIN 12" MAX
D	24" MIN	24" MIN	26" MIN
E	24" MIN	28" MIN	30" MIN

FITTINGS & VALVES BY CONTRACTOR

	4"x2"	6"x3"	8"x4"
(A)	6"x4" FLG TEE	8"x 4" FLG TEE	10"x6" FLG TEE
(B)	6" MJxFLG ADAPTER	8" MJxFLG ADAPTER	10" MJ x FLG ADAPTER
(C)	4" MJ 90° BEND	4" MJ 90° BEND	6" MJ 90° BEND
(D)	6" MJxFLG RW GATE VALVE	8" MJxFLG RW GATE VALVE	10" MJxFLG RW GATE VALVE
(E)	6" FLG RW GATE VALVE	8" FLG RW GATE VALVE	10" FLG RW GATE VALVE
(F)	4" MJxFLG RW GATE VALVE	4" MJxFLG RW GATE VALVE	6" MJxFLG RW GATE VALVE
(G)	6" FLG x PE CONTINUOUS D.I. PIPE	8" FLG x PE CONTINUOUS D.I. PIPE	10" FLG x PE CONTINUOUS D.I. PIPE

FITTINGS, VALVES, & METER BY CITY

	4"x2"	6"x3"	8"x4"
(1)	6"x 4" FLG REDUCER	8"x 6" FLG REDUCER	10" x 8" FLG REDUCER
(2)	6" MJxFLG RW GATE VALVE	8" MJxFLG RW GATE VALVE	10" MJxFLG RW GATE VALVE
(3)	4"x 2" HERSEY MFM/MCT2 COMPOUND METER	6"x 3" HERSEY MFM/MCT2 COMPOUND METER	8"x 4" HERSEY MFM/MCT2 COMPOUND METER

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COMMUNITY DEVELOPMENT
CITY OF SCAPPOOSE
34485 E. COLUMBIA AVENUE, PO BOX "P", CITY OF SCAPPOOSE, OR. 97056

STANDARD HERSEY MFM/MCT2
COMPOUND METER INSTALLATION- 4" X 2", 6" X 3", & 8" X 4"

SCALE	N.T.S.
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NOTES:

1. METER AND DOWNSTREAM VALVE TO BE INSTALLED BY THE CITY ONCE NEW PIPING AND FITTINGS HAVE BEEN TESTED AND ACCEPTED.

2. ALL VAULT WALL OPENINGS SHALL BE CORE DRILLED AND SEALED WITH LINK–SEAL BRAND PIPE SEAL OR APPROVED EQUAL.

3. TOP OF VAULT SHALL BE A MINIMUM OF 12" ABOVE FINISHED GRADE.

4. INSTALL 4" DRAIN FROM BOTTOM OF VAULT FLOOR TO DAYLIGHT, TO BACKFLOW ASSEMBLY VAULT, TO STORM DRAIN SYSTEM OR TO APPROVED SUMP WITH SUMP PUMP. IN NO CASE SHALL BACKFLOW ASSEMBLY VAULT DRAIN INTO METER VAULT.

5. INSTALL 4" BACKWATER VALVE, MDL. NO. 7022 AND SMITH 4" FLOOR DRAIN MDL. NO. 2210 OR APPROVED EQUAL ON FLOOR DRAIN.

6. VAULT SHALL BE CLEAN, DRY AND FREE OF DEBRIS PRIOR TO METER INSTALLATION

7. ALL MECHANICAL JOINTS SHALL BE RESTRAINED WITH "MEGALUG" RETAINER GLANDS.

8. SERVICE LINE INTO VAULT SHALL BE MECHANICALLY RESTRAINED FROM MAINLINE THROUGH VAULT.

9. ALL PIPING TO BE BACKFILL AS DESCRIBED & SHOWN IN STANDARD DETAIL DRAWING 402.

10. INSTALL A MIN. OF 3 PIPE SUPPORTS IN VAULT (GRINNELL NO. 264, ELCEN NO. 50 OR APPROVED EQUAL).

11. ALL PIPING AND FITTINGS IN VAULT SHALL BE LEVEL AND A MINIMUM OF 12" AND A MAX. OF 48" ABOVE THE FLOOR OF VAULT.

12. ONLY APPROVED RESILIENT WEDGE VALVES ARE ALLOWED.

13. ALL VAULT LIDS SHALL BE EQUIPPED WITH 2 CAST IRON METER LID OPENINGS. ALL DOORS SHALL BE TL2–332P.

14. VAULT SHALL BE EQUIPPED WITH AN OSHA APPROVED LADDER. IF VAULT DEPTH IS GREATER THAN 6', AN OSHA APPROVED EXTENSION LADDER SHALL BE INSTALLED.

15. PIPE BETWEEN THE TWO TEES SHALL BE ONE LEVEL CONTINUOUS PIECE.

16. ALL FITTINGS, VALVES AND PIPING THROUGH ENTIRE VAULT SHALL BE LEVEL AT COMPLETION OF INSTALLATION.

17. VAULT SHALL BE SEALED WITH "CRYSTAL SEAL" AT MANUFACTURER.

DRAWN	DRAWN		COMMUNITY DEVELOPMENT	SCALE N.T.S.
DIV.	DEPT		CITY OF SCAPPOOSE	DATE 2002
REV.	DATE	APPR.	34485 E. COLUMBIA AVENUE, PO BOX "P", CITY OF SCAPPOOSE, OR. 97056	APPR.
			STANDARD HERSEY COMPOUND METER INSTALLATION NOTES	DWG. NO. 415D

CITY OF SCAPPOOSE
CROSS CONNECTION PROGRAM

BACKFLOW ASSEMBLY AND VAULT INSTALLATION STANDARDS

* DOUBLE CHECK VALVE ASSEMBLY
* DOUBLE CHECK DETECTOR ASSEMBLY
* REDUCED PRESSURE (R.P.) ASSEMBLY

CONTACTS

DEPARTMENT	NAME	PHONE NO.
CITY ENGINEER	EUGENE SMITH	503–543–7184
FIELD SERVICES	TERRY ANDREWS	503–543–7184
BUILDING OFFICIAL	DON SALLEE	503–543–7184
FIRE DEPARTMENT	MIKE GREISEN	503–543–5026

DRAWN	DRAWN	
DIV.	DEPT	
REV.	DATE	APPR.

COMMUNITY DEVELOPMENT
CITY OF SCAPPOOSE
34485 E. COLUMBIA AVENUE, PO BOX "P", CITY OF SCAPPOOSE, OR. 97056

BACKFLOW ASSEMBLY

SCALE	N.T.S.
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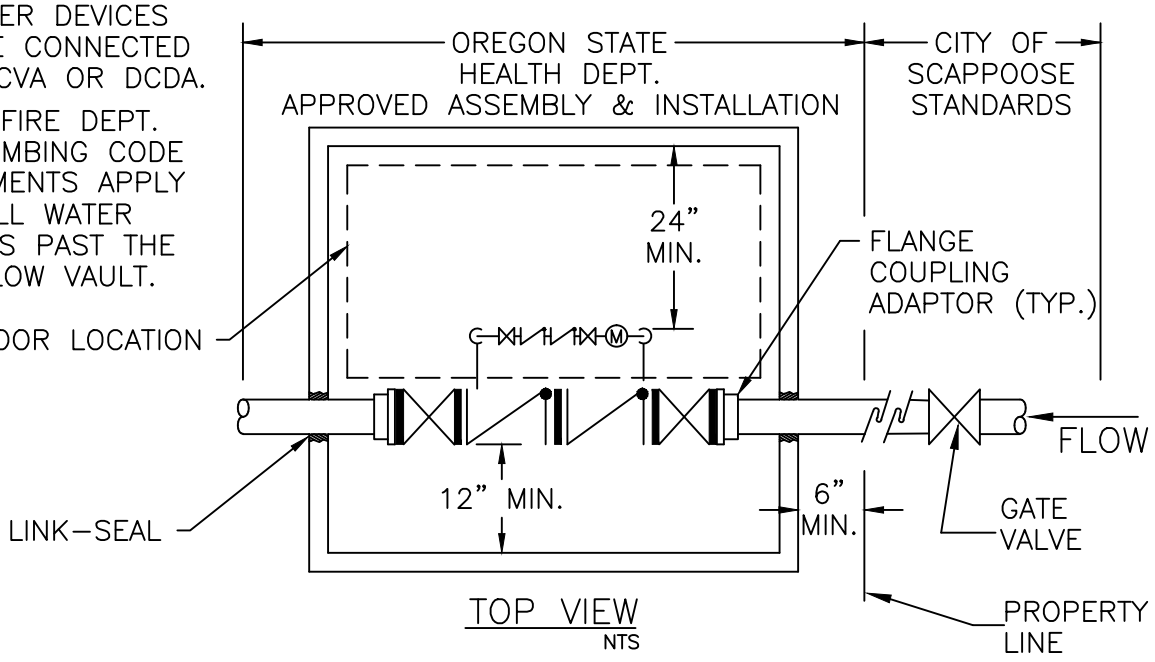
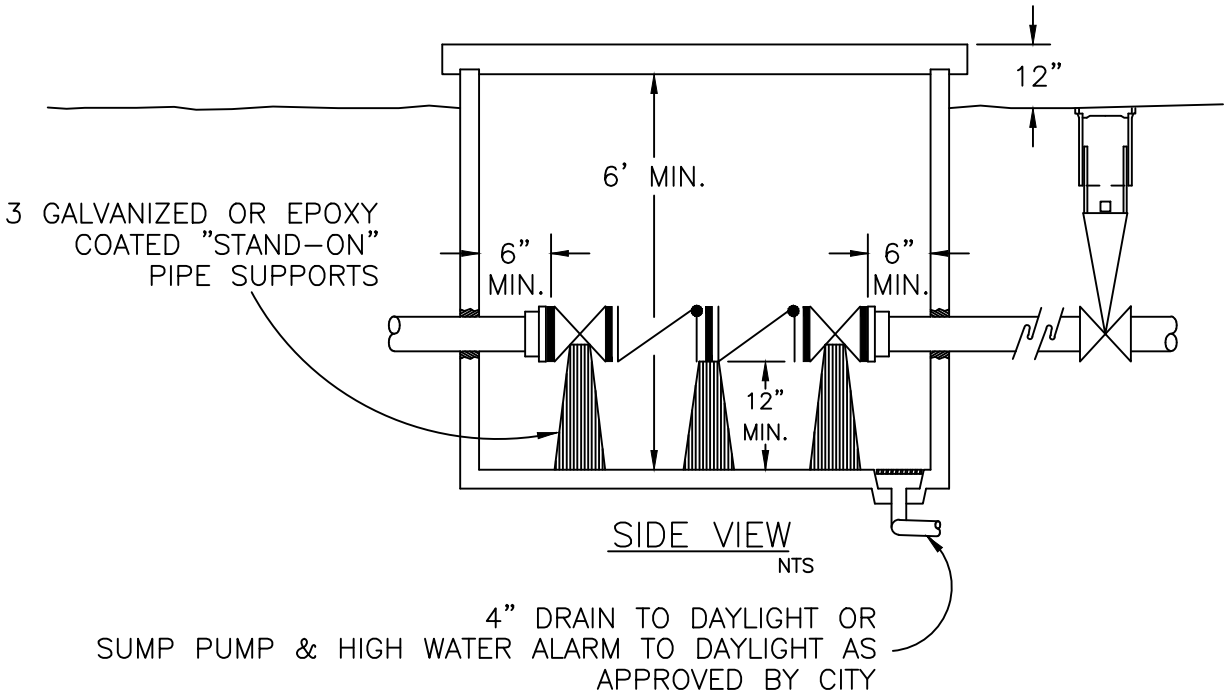
NO OTHER DEVICES SHALL BE CONNECTED TO THE DCVA OR DCDA.

LOCAL FIRE DEPT. AND PLUMBING CODE REQUIREMENTS APPLY TO ALL WATER FACILITIES PAST THE BACKFLOW VAULT.



TOP VIEW
NTS



SIDE VIEW
NTS

DRAWN	DRAWN	
DIV.	DEPT	
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COMMUNITY DEVELOPMENT
CITY OF SCAPPOOSE
34485 E. COLUMBIA AVENUE, PO BOX "P", CITY OF SCAPPOOSE, OR. 97056

DOUBLE CHECK VALVE (DETECTOR) BACKFLOW ASSEMBLY

SCALE	N.T.S.
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CITY OF SCAPPOOSE
REQUIREMENTS FOR BACKFLOW PREVENTION ASSEMBLY INSTALLATIONS ON 1 1/2" AND LARGER DOMESTIC SERVICES, IRRIGATION SERVICES AND FIRELINE SERVICES

AN APPROVED BACKFLOW PREVENTION ASSEMBLY IS REQUIRED ON ALL 1 1/2" AND LARGER DOMESTIC METER SIZE SERVICES, PLUS ALL DEDICATED IRRIGATION AND ALL FIRELINE SYSTEMS. AN ASSEMBLY WILL BE APPROVED BY THE CITY OF SCAPPOOSE ONLY IF THE STATE OF OREGON HEALTH DIVISION HAS APPROVED ITS USE AS A BLACKFLOW ASSEMBLY, AND THE ASSEMBLY IS TESTABLE. THE ASSEMBLY SHALL BE INSTALLED AT THE PROPERTY LINE. WHEN IT IS NOT POSSIBLE TO LOCATE THE ASSEMBLY AT THE PROPERY LINE, THE PROPOSED LOCATION MUST BE APPROVED BY THE FIELD SERVICES SUPERVISOR BEFORE INSTALATION. A WATER SERVICE SHALL NOT BE TURNED ON UNTIL ALL REQUIRED BACKFLOW PREVENTION ASSEMBLIES ARE INSTALLED, INSPECTED, TESTED, AND REGISTERED WITH THE CITY OF SCAPPOOSE (SEE NOTE 8 BELOW). COST OF ALL INSTALLATIONS, INCLUDING ALL COST OF INITIAL INSPECTION AND TESTING FEES, SHALL BE THE RESPONSIBILITY OF THE CUSTOMER. THE COSTOMER WILL BE RESPONSIBLE FOR ALL MAINTENANCE AND TESTING OF THE ASSEMBLY AND VAULT WHEN USED.

CONSTRUCTION AND DESIGN STANDARDS FOR WATER FACILITIES

1. ALL PIPE WILL BE INSTALLED TO THE CITY OF SCAPPOOSE PUBLIC WORKS STANDARDS.

2. THE CITY OF SCAPPOOSE WILL BE FURNISHED WITH THREE SETS OF PLANS AND SPECIFICATIONS. THE PLANS WILL BE DRAWN AT A SCALE OF 1"=20' FOR PLAN CHECK. ONE SET OF REVISED PLANS WILL BE RETURNED TO THE ENGINEER FOR REVISIONS.

3. THE CONTRACTOR WILL KEEP ONE SET OF APPROVED PLANS AT THE CONSTRUCTION SITE.

4. THE ENGINEER WILL FURNISH THE CITY OF SCAPPOOSE 48–HOUR NOTICE PRIOR TO CONSTRUCTION.

5. WATER FACILITIES WILL BE INSTALLED IN THE PRESENCE OF THE CITY OF SCAPPOOSE INSPECTOR. THE INSPECTOR SHALL HAVE ACCESS TO THE CONSTRUCTION SITE AT ALL TIMES.

6. NEW MAINS ARE TO BE PRESSURE TESTED AND DISINFECTED BY THE CONTRACTOR AND PROVEN TO BE BACTERIOLOGICALLY SAFE PRIOR TO PLACING NEW MAINS IN SERVICE AND PRIOR TO CONNECTION TO CITY FACILITIES.

7. UPON COMPLETION OF THE WATER FACILITY, THE ENGINEER WILL NOTIFY THE CITY OF SCAPPOOSE 48 HOURS IN ADVANCE OF DESIRED, FINAL INSPECTION.

8. CONTRACTOR MUST COORDINATE BACKFLOW ASSEMBLY TEST WITH THE FIELD SERVICES SUPERVISOR. (TELEPHONE NO. 503–543–7184) TO RECEIVE SERVICE TO PROPERTY. METER STOPS AND VALVES TO REMAIN LOCKED & OFF UNTIL THAT TIME OF COORD–INATION AND APPROVED TEST.

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COMMUNITY DEVELOPMENT
CITY OF SCAPPOOSE
34485 E. COLUMBIA AVENUE, PO BOX "P", CITY OF SCAPPOOSE, OR. 97056

BACKFLOW ASSEMBLY

SCALE	N.T.S.
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DWG. NO.	416C

DOUBLE CHECK VALVE (DETECTOR) ASSEMBLY
BACKFLOW ASSEMBLY INSTALLATION STANDARD

TO ENSURE PROPER OPERATION AND ACCESSIBLITY OF ALL BACKFLOW PREVENTION ASSEMBLIES, THE FOLLOWING REQUIREMENTS SHALL APPLY TO INSTALLATION OF THESE ASSEMBLIES UNLESS SPECIFICALLY APPROVED BY THE FIELD SERVICES SUPERVISOR. THE CITY OF SCAPPOOSE PUBLIC WORKS STANDARDS AND CHAPTER 5 OF THE CITY CODE WILL TAKE PRECEDENCE IN DESIGN AND INSTALLATION.

1. NO PART OF THE BACKFLOW PREVENTION ASSEMBLY SHALL BE SUBMERGED IN WATER OR INSTALLED IN A LOCATION SUBJECT TO FLOODING. IF INSTALLED IN A VAULT OR CHAMBER, ADEQUATE DRAINAGE SHALL BE PROVIDED ONTO OWNER'S PROPERTY BY EITHER DRAINAGE TO DAYLIGHT OR BY SUMP PUMP TO DAYLIGHT WITH HIGH WATER ALARM SYSTEM. TEST COCKS SHALL BE PLUGGED. THE PLUGS SHALL NOT BE OF DISSIMILAR METALS.
2. THE ASSEMBLY MUST BE PROTECTED FROM FREEZING AND OTHER SEVERE WEATHER CONDITIONS.
3. ONLY ASSEMBLIES APPROVED FOR VERTICAL INSTALLATION MAY BE INSTALLED VERTICALLY.
4. THE ASSEMBLY SHALL BE READILY ACCESSIBLE WITH ADEQUATE ROOM FOR MAINTENANCE AND TESTING. ASSEMBLIES 2 INCHES AND SMALLER SHALL HAVE AT LEAST A 12–INCH CLEARANCE BELOW AND ON BOTH SIDES OF THE ASSEMBLY; AND IF LOCATED IN A VAULT, THE TOP OF THE ASSEMBLY SHALL BE BETWEEN 18 AND 24 INCHES BELOW GRADE.

   ALL ASSEMBLIES LARGER THAN 2 INCHES SHALL HAVE A 12–INCH CLEARANCE ON THE BACKSIDE, A 24–INCH CLEARANCE ON THE TEST–COCK SIDE, AND 12 INCH BELOW THE ASSEMBLY. ADEQUATE CLEARANCE (3 INCHES MIN.) MUST BE MAINTAINIED ABOVE O.S. & Y. GATE–VALVE STEM. HEADROOM OF 6'–0" IS REQ'D IN VAULTS. ACCESS TO THE ASSEMBLIES AND TO ANY VAULT OR CHAMBER SHALL REMAIN CLEAR AT ALL TIMES. AN OR/OSHA APPROVED CHAMBER LADDER THAT EXTENDS 3 FT. ABOVE SURFACE OF VAULT SHALL BE INSTALLED.
5. NO POST INDICATING VALVES ARE ALLOWED TO BE INSTALLED DIRECTLY ON DOUBLE CHECK DETECTOR ASSEMBLIES.
6. ONLY APPROVED DOUBLE CHECK DETECTOR ASSEMBLIES ARE TO BE USED FOR SYSTEM CONTAINMENT ON FIRE LINE SERVICES IN THE CITY OF SCAPPOOSE THE METER ON BYPASS ASSEMBLY SHALL READ IN CUBIC FEET.
7. IF A FIRE LINE FLOW, OR TAMPER SWITCH IS INSTALLED, IT MUST BE CONNECTED TO A MONITORED FIRE DETECTION SYSTEM APPROVED BY THE FIRE MARSHAL. NO INSTAL–LATION WILL MODIFY THE BACKFLOW ASSEMBLY OR INTERFERE WITH ITS OPERATION OR MAINTENANCE.
8. ALL BACKFLOW ASSEMBLIES SHALL BE INSTALLED AT THE SERVICE CONNECTION TO THE PREMISES PER OREGON ADMINISTRATIVE RULES 333–61–070, CROSS CONNECTION CONTROL REQUIREMENTS, UNLESS SPECIFICALLY APPROVED BY THE FIELD SERVICES SUPERVISOR. (SERVICE CONNECTION – A LOCATION WHERE THE PUBLIC WATER FACILITIES END AT OR NEAR THE PROPERTY LINE)
9. ALL PIPE BETWEEN MAIN AND ASSEMBLY SHALL BE RESTRAINED. USE "MEGALUG" RETAINER GLANDS ON MJ FITTINGS AND "FIELD–LOK" TYPE GASKETS ON BELL JOINTS. UNI–FLANGE ADAPTERS MAY BE USED IN VAULTS.
10. APPROVED BACKFLOW ASSEMBLY MAY NOT BE MODIFIED IN ANY WAY FROM WHICH IT WAS MANUFACTURED, TESTED AND APPROVED.

DRAWN	DRAWN	
DIV.	DEPT	
REV.	DATE	APPR.

COMMUNITY DEVELOPMENT
CITY OF SCAPPOOSE
34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON

DOUBLE CHECK VALVE (DETECTOR) BACKFLOW ASSEMBLY

SCALE	N.T.S.
DATE	2002
APPR.	
DWG. NO.	416D

REDUCED PRESSURE (R.P.) PRINCIPLE BACKFLOW PREVENTION ASSEMBLY (R.P.)

INSTALLATION STANDARD

AS WELL AS IN THE PREVIOUSLY STATED INSTALLATION STANDARDS, THESE INSTALLATION STANDARDS SHALL APPLY TO THE INSTALLATION OF R.P. ASSEMBLIES:

R.P.'S SHALL BE UTILIZED AT PREMISES WHERE A SUBSTANCE IS HANDLED THAT WOULD BE HAZARDOUS TO HEALTH IF INTRODUCED INTO THE POTABLE WATER SYSTEM. THE R.P. IS NORMALLY USED IN LOCATIONS WHERE AN AIR GAP IS IMPRACTICAL. THE R.P. IS EFFECTIVE AGAINST BOTH BACKSIPHONAGE AND BACKPRESSURE.

1. R.P.'S MUST BE SIZED TO PROVIDE AN ADEQUATE SUPPLY OF WATER AND PRESSURE FOR THE PREMISES BEING SERVED. FLOW CHARACTERISTICS ARE NOT STANDARD. CONSULT MANUFACTURER'S SPECIFICATIONS FOR SPECIFIC PERFORMANCE DATA.

2. PREMISES WHERE INTERURPTION OF WATER SUPPLY IS CRITICAL SHOULD BE PROVIDED WITH TWO ASSEMBLIES INSTALLED IN PARALLEL. THEY SHOULD BE SIZED IN SUCH A MANNER THAT EITHER ASSEMBLY WILL PROVIDE THE MINIMUM WATER REQUIREMENTS WHILE THE TWO TOGETHER WILL PROVIDE THE MAXIMUM FLOW REQUIRED.

3. BYPASS LINES ARE PROHIBITED. PIPE FITTINGS WHICH COULD BE USED FOR CONNECTING A BYPASS LINE SHALL NOT BE INSTALLED.

4. THE ASSEMBLY SHALL BE READILY ACCESSIBLE FOR TESTING AND MAINTENANCE AND SHALL BE LOCATED IN AN AREA WHERE WATER DAMAGE TO BUILDING OR FURNISHINGS WOULD NOT OCCURE FROM RELIEF VALVE DISCHARGE. AN APPROVED AIR GAP FUNNEL ASSEMBLY MAY BE USED TO DIRECT MINOR DISCHARGES AWAY FROM THE ASSEMBLY; THIS ASSEMBLY WILL NOT CONTROL FLOW IN A CONTINUOUS RELIEF SITUATION. DRAIN LINES TO ACCOMMODATE FULL RELIEF VALVE DISCHARGE FLOW SHALL BE REQUIRED.

   R.P.'S SHALL BE INSTALLED ABOVE GRADE IN WELL DRAINED AREA, BUT MAY BE INSTALLED BELOW GRADE BY APPROVAL OF FIELD SERVICES SUPERVISOR BEFORE INSTALLATION, IF AN ADEQUATE DRAIN BY GRAVITY THROUGH A "BORSIGHT" DRAIN TO DAYLIGHT IS PROVIDED.

   ENCLOSURES SHALL BE DESIGNED FOR READY ACCESS AND SIZED TO ALLOW FOR THE MINIMUM CLEARANCES ESTABLISHED BELOW. REMOVABLE PROTECTIVE ENCLOSURES ARE TYPICALLY INSTALLED ON THE SMALLER ASSEMBLIES. BORE SIGHTED DAYLIGHT DRAIN PORTS MUST BE PROVIDED TO ACCOMODATE FULL PRESSURE DISCHARGE FROM THE ASSEMBLY.

   ALL ASSEMBLIES LARGER THAN 2 INCHES SHALL HAVE A MINIMUM OF 12 INCHES CLEARANCE ON THE BACK SIDE, 24 INCHES CLEARANCE ON THE TEST COCK SIDE, AND RELIEF VALVE OPENING SHALL BE AT LEAST 12 INCHES PLUS NOMINAL SIZE OF ASSEMBLY ABOVE THE FLOOR OR HIGH TEST POSSIBLE WATER LEVEL WHICHEVER IS HIGHER. HEADROOM OF 6 FEET IS REQUIRED IN VAULTS. A MINIMUM ACCESS OPENING OF 36"x72" INCHES SQUARE IS REQUIRED ON ALL VAULT LIDS. A LADDER MEETING OSHA REQUIREMENTS SHALL BE PERMANENTLY INSTALLED IN THE VAULT, UNLESS A SIDE ENTRY ENCLOSURE IS USED.

DRAWN	DRAWN		COMMUNITY DEVELOPMENT	SCALE N.T.S.
DIV.	DEPT		CITY OF SCAPPOOSE	DATE 2002
REV.	DATE	APPR.	34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON	APPR.
			REDUCED PRESSURE BACKFLOW ASSEMBLY	DWG. NO. 416E

REDUCED PRESSURE (R.P.) PRINCIPLE BACKFLOW PREVENTION ASSEMBLY (R.P.)
INSTALLATION STANDARD

ASSEMBLIES INSTALLED MORE THAN 5 FEET ABOVE FLOOR LEVEL MUST HAVE A SUITABLE PLATFORM FOR USE BY TESTING OR MAINTENANCE PERSONNEL.

5. THE ASSEMBLY MUST BE PROTECTED FROM FREEZING AND OTHER SEVERE WEATHER CONDITIONS.

6. VERTICAL INSTALLATION IS PROHIBITED.

7. THE PROPERTY OWNER ASSUMES ALL RESPONSIBILITY FOR LEAKS AND DAMAGE. THE OWNER SHALL ALSO KEEP THE VAULT REASONABLY FREE OF SILT AND DEBRIS.

8. VARIANCES FROM THESE REGULATIONS WILL BE EVALUTED ON A CASE–BY–CASE BASIS. ANY DEVIATIONS MUST HAVE PRIOR WRITTEN APPROVAL OF THE WATER DIVISION MANAGER PRIOR TO INSTALLATION.

VAULT SIZING CHART FOR
DOUBLE CHECK & R.P. BACKFLOW ASSEMBLIES

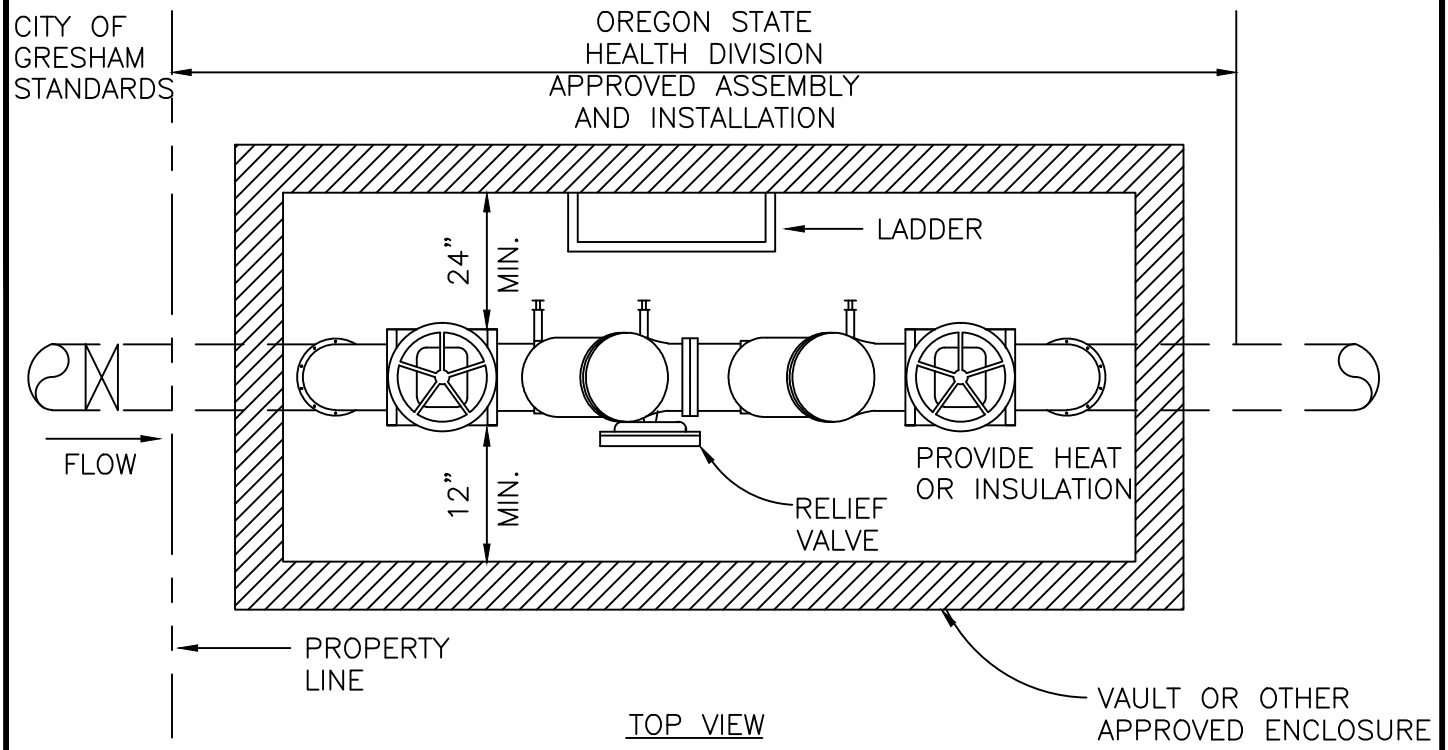
SIZE	UTILITY VAULT FOR BACKFLOW ASSEMBLY	
	VAULT	LID
3"	577–LA	LID 577–TL2–332P
4"	577–LA	LID 577–TL2–332P
6"	676–LA	LID 676–TL2–332P
8"	687–LA	LID 687–TL2–332P
10"	5106–LA	LID 5106–TL2–332P

DRAWN	DRAWN	
DIV.	DEPT	
REV.	DATE	APPR.

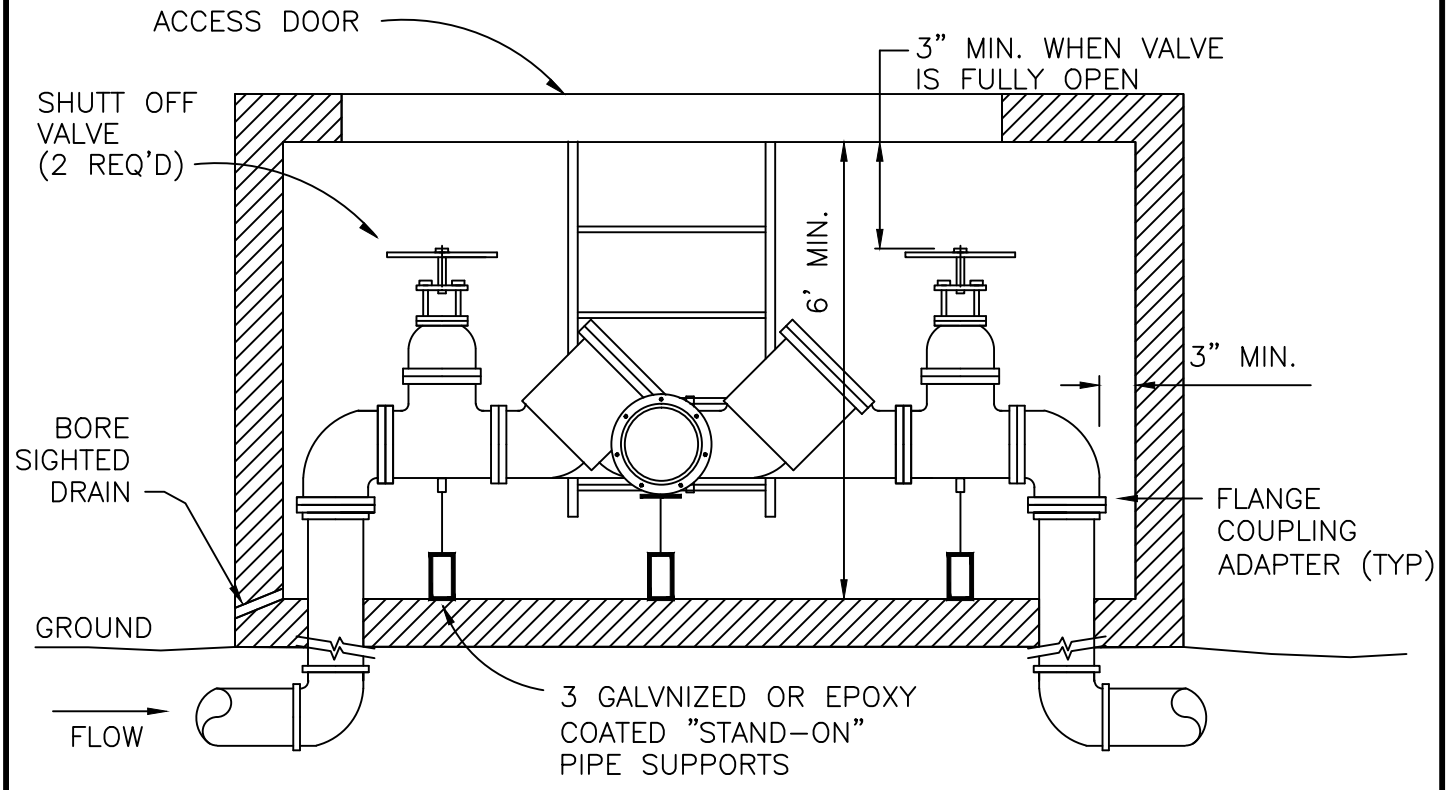
COMMUNITY DEVELOPMENT
CITY OF SCAPPOOSE
34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON

BACKFLOW ASSEMBLY

SCALE	N.T.S.
DATE	2002
APPR.	
DWG. NO.	416F



TOP VIEW



SIDE VIEW

DRAWN	DRAWN	
DIV.	DEPT	
REV.	DATE	APPR.

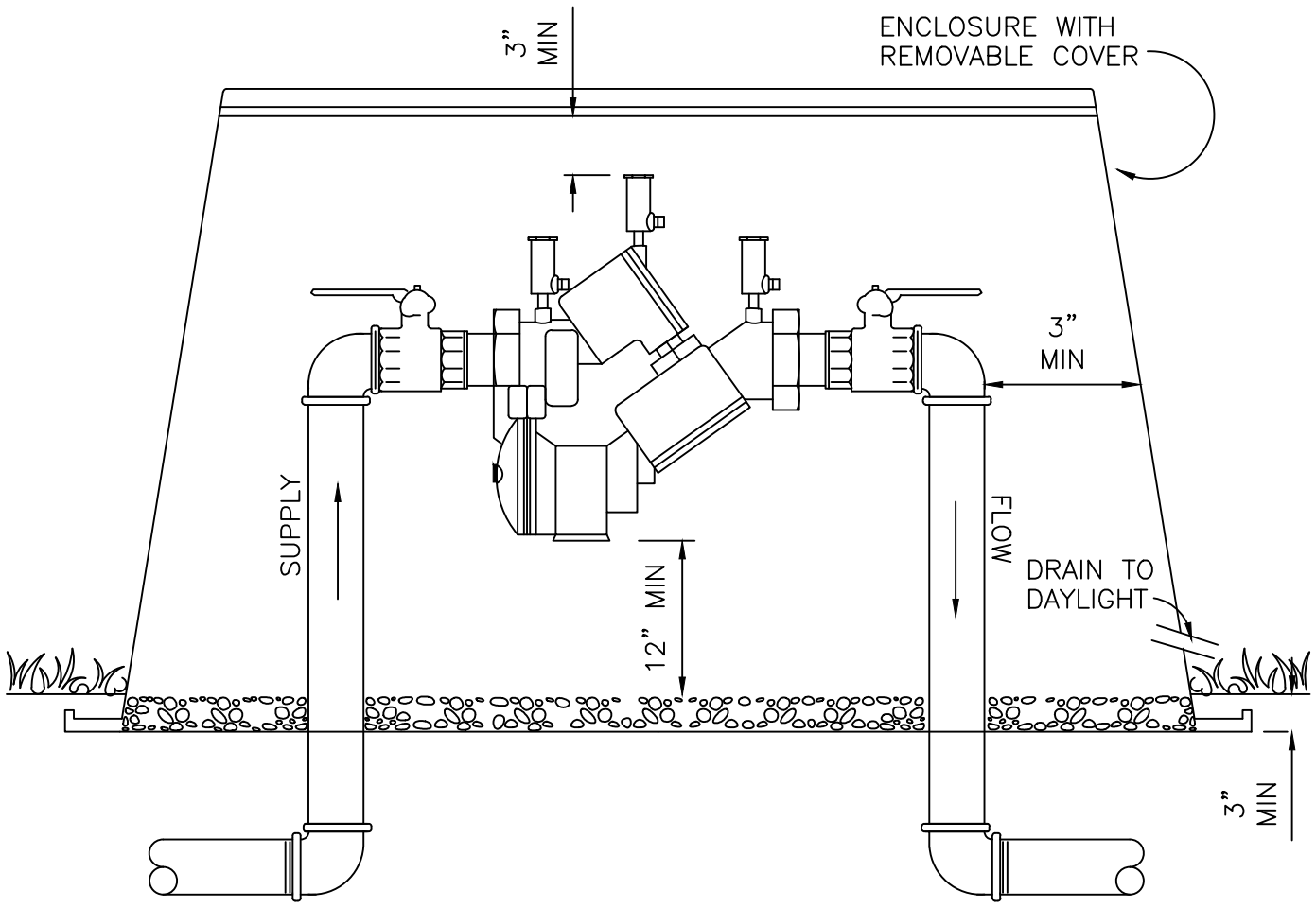
COMMUNITY DEVELOPMENT

CITY OF SCAPPOOSE

34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON

REDUCED PRESSURE PRINCIPLE ALLEMBLY 3" AND LARGER

SCALE	N.T.S.
DATE	2002
APPR.	
DWG. NO.	416G



DRAWN	DRAWN	
DIV.	DEPT	
REV.	DATE	APPR.

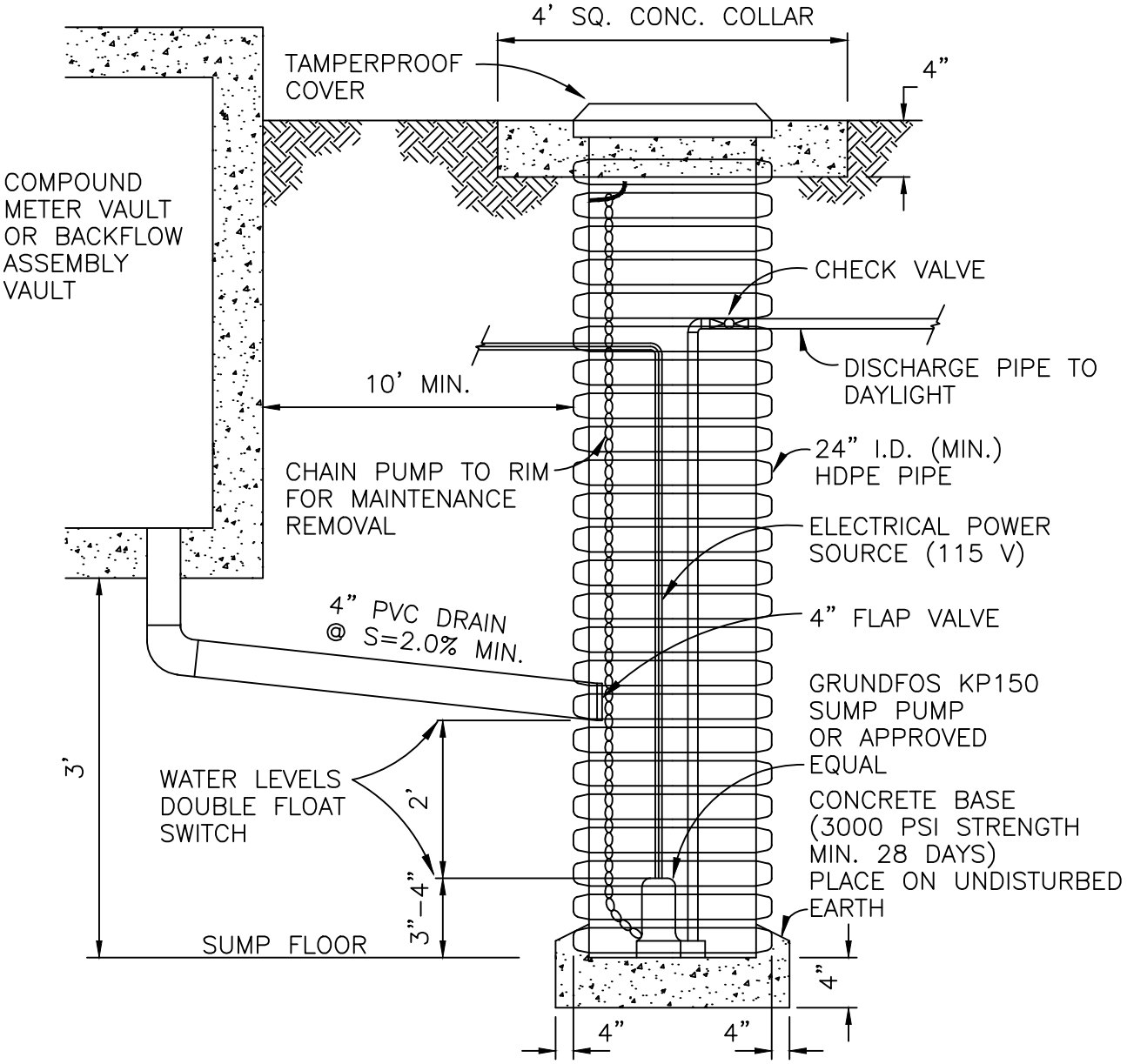
COMMUNITY DEVELOPMENT

CITY OF SCAPPOOSE

34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON

REDUCED PRESSURE PRINCIPLE
SMALL ASSEMBLY 2-1/2" AND SMALLER

SCALE	N.T.S.
DATE	2002
APPR.	
DWG. NO.	416H



NOTES:

1. THIS DETAIL TO BE USED AS A GUIDELINE. SITE SPECIFIC DESIGN SHALL BE COMPLETED BY ENGINEER.
2. SUMP AND SUMP PUMP ASSEMBLY SHALL BE OWNED & MAINTAINED BY THE PROPERTY OWNER BEING SERVED.
3. HIGH WATER ALARM SYSTEM REQUIRED TO MONITOR OPERATION OF SUMP PUMP.

DRAWN	DRAWN	
DIV.	DEPT	
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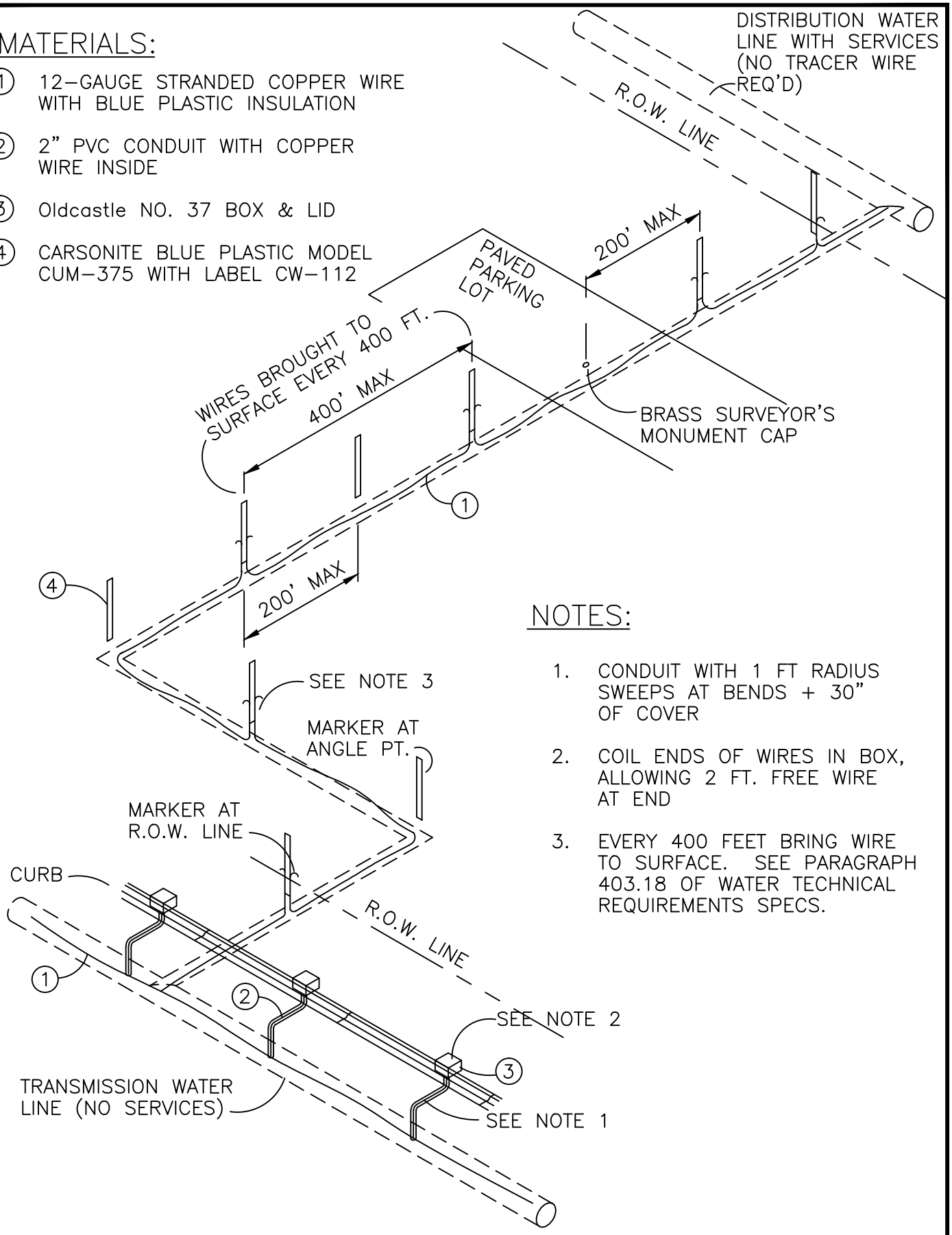
COMMUNITY DEVELOPMENT
CITY OF SCAPPOOSE
34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON

EXAMPLE SUMP WITH SUMP PUMP

SCALE	N.T.S.
DATE	2002
APPR.	
DWG. NO.	417

MATERIALS:

1. 12–GAUGE STRANDED COPPER WIRE WITH BLUE PLASTIC INSULATION
2. 2" PVC CONDUIT WITH COPPER WIRE INSIDE
3. Oldcastle NO. 37 BOX & LID
4. CARSONITE BLUE PLASTIC MODEL CUM–375 WITH LABEL CW–112



NOTES:

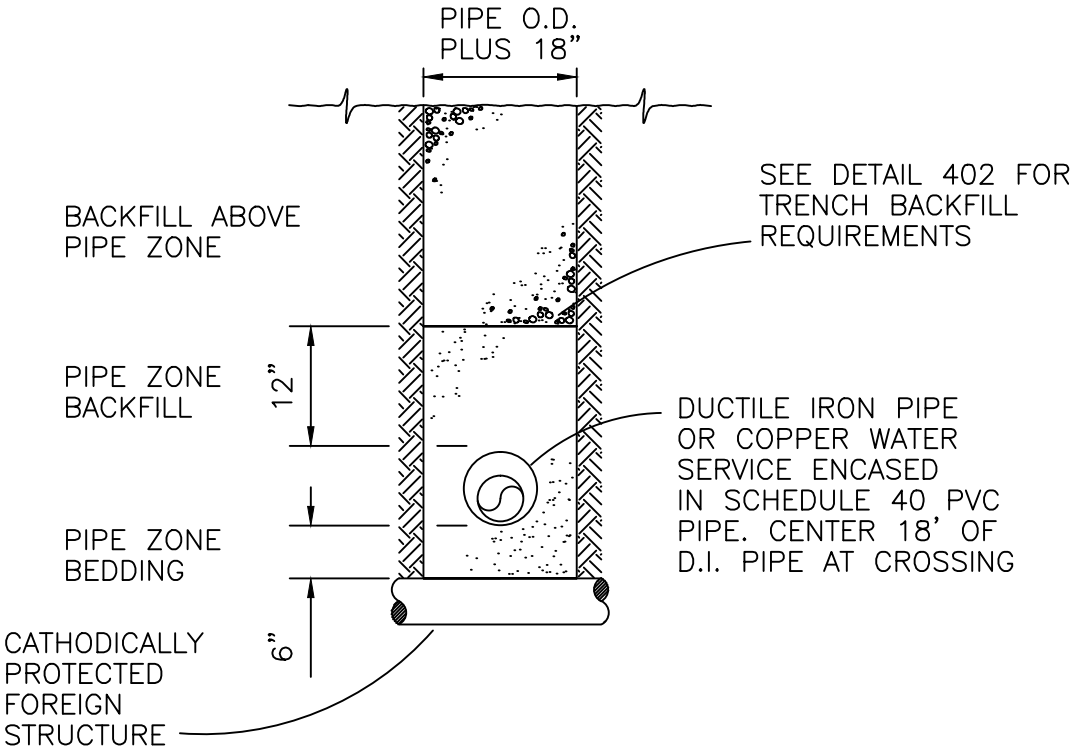
1. CONDUIT WITH 1 FT RADIUS SWEEPS AT BENDS + 30" OF COVER
2. COIL ENDS OF WIRES IN BOX, ALLOWING 2 FT. FREE WIRE AT END
3. EVERY 400 FEET BRING WIRE TO SURFACE. SEE PARAGRAPH 403.18 OF WATER TECHNICAL REQUIREMENTS SPECS.

DRAWN	DRAWN	
DIV.	DEPT	
REV.	DATE	APPR.

COMMUNITY DEVELOPMENT
CITY OF SCAPPOOSE
34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON

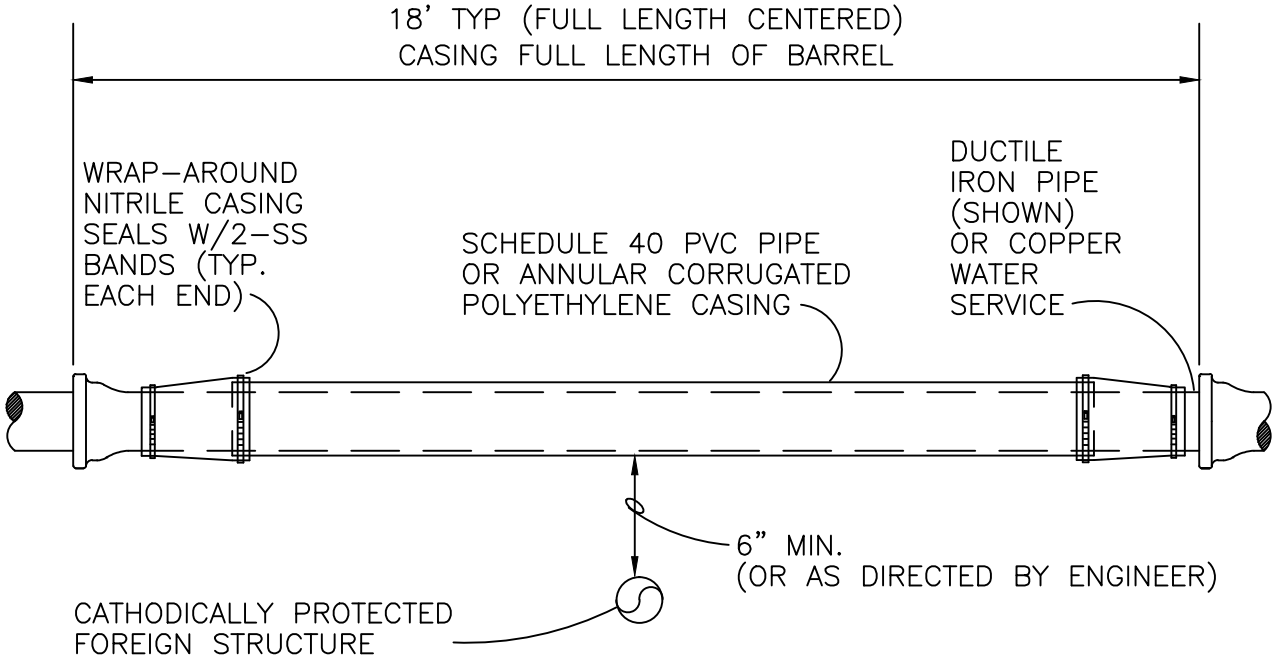
TRACER WIRE INSTALLATION

SCALE	N.T.S.
DATE	2002
APPR.	
DWG. NO.	418



TRENCH SECTION

N.T.S.



ELEVATION

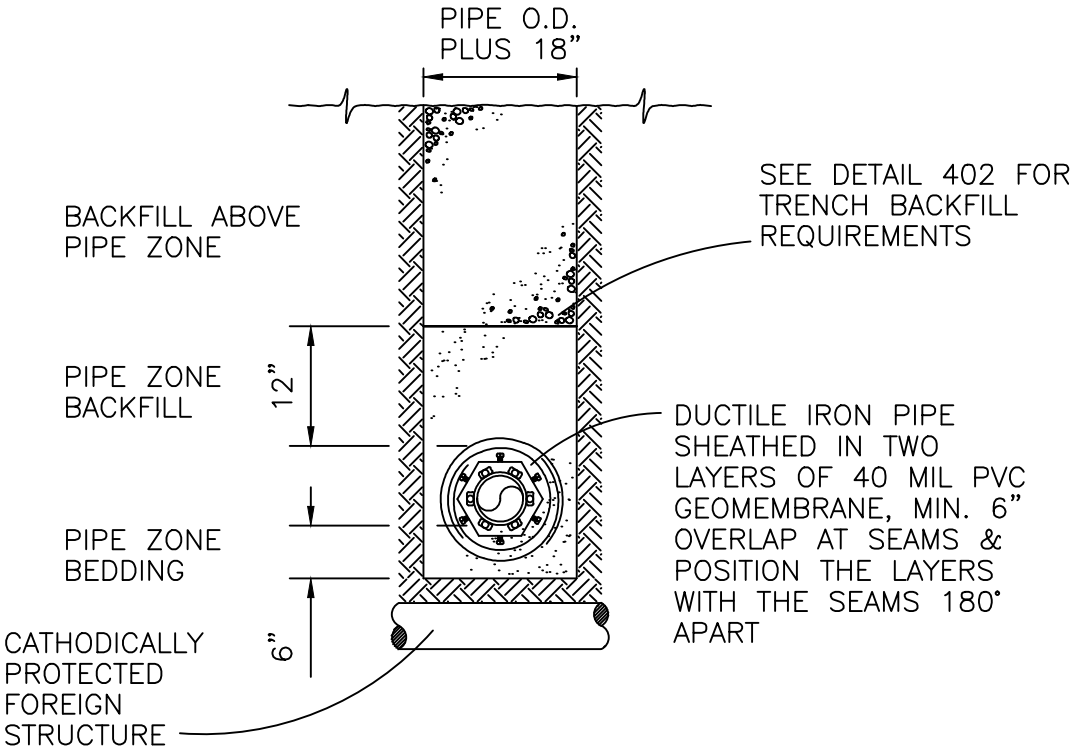
N.T.S.

DRAWN	DRAWN	
DIV.	DEPT	
REV.	DATE	APPR.

COMMUNITY DEVELOPMENT
CITY OF SCAPPOOSE
34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON

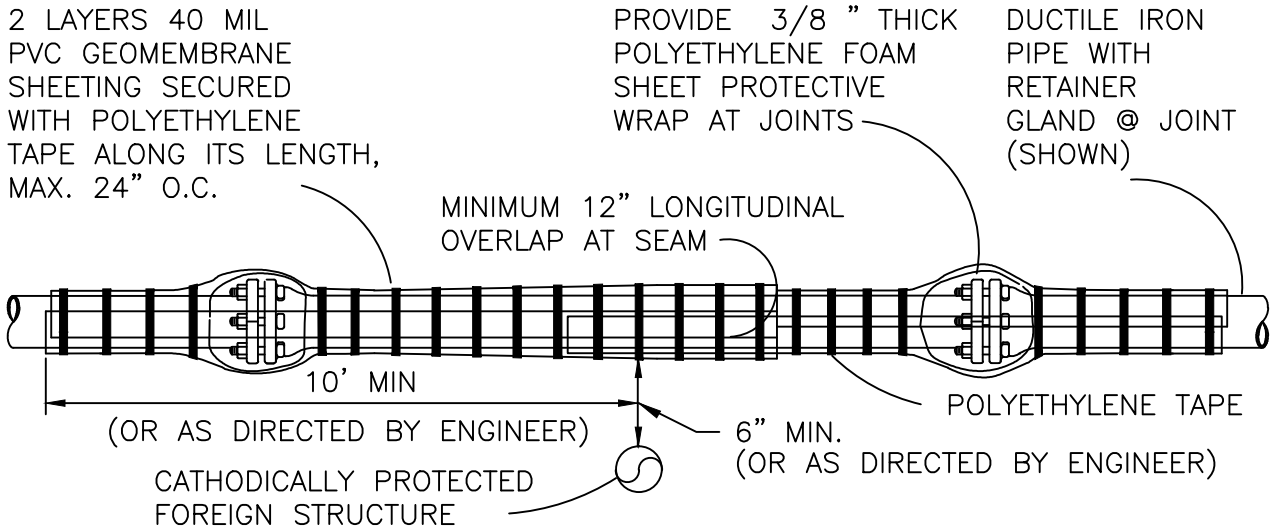
PROTECTIVE CASING FOR CROSSING CATHODICALLY PROTECTED STRUCTURES

SCALE	N.T.S.
DATE	2002
APPR.	
DWG. NO.	419



TRENCH SECTION

N.T.S.



ELEVATION

N.T.S.

DRAWN	DRAWN	
DIV.	DEPT	
REV.	DATE	APPR.

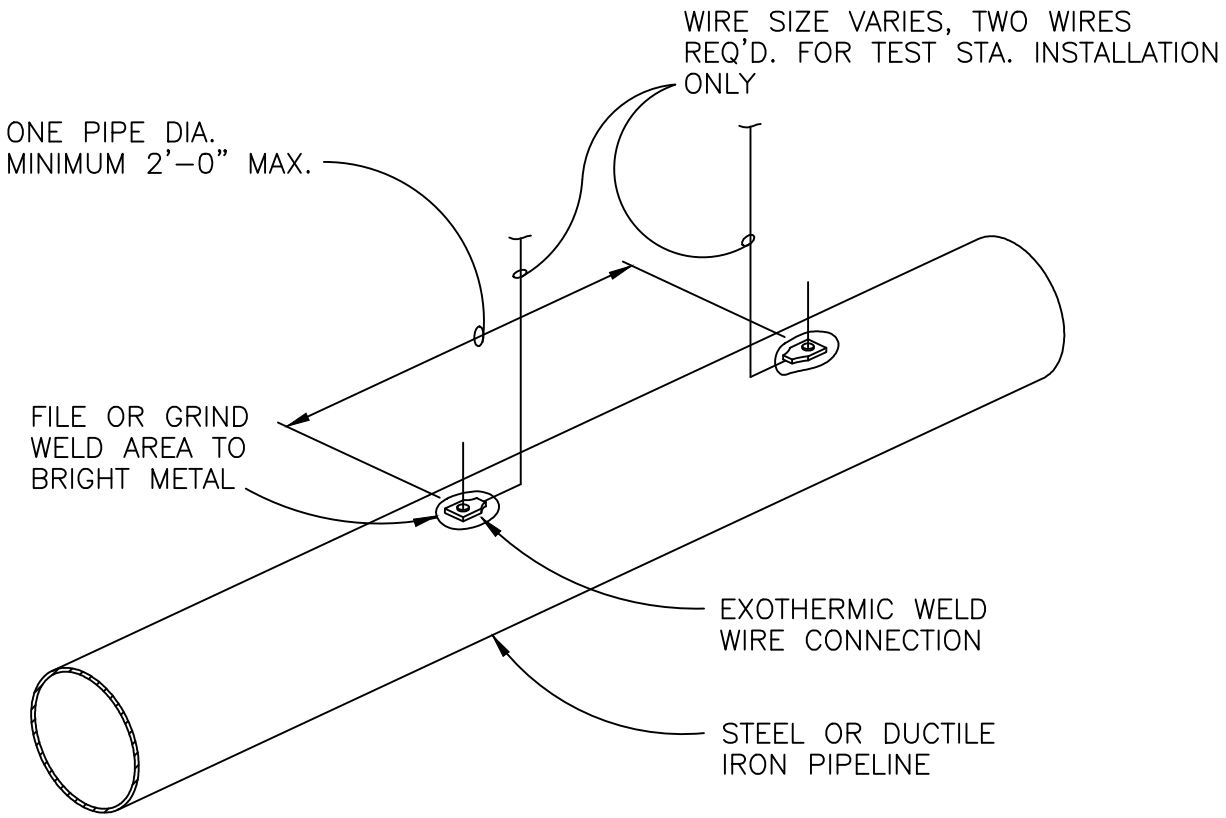
COMMUNITY DEVELOPMENT

CITY OF SCAPPOOSE

34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON

PROTECTIVE GEOMEMBRANE FOR CROSSING CATHODICALLY PROTECTED STRUCTURES

SCALE	N.T.S.
DATE	2002
APPR.	
DWG. NO.	420



NOTES:

1. COPPER SLEEVE REQUIRED FOR EXOTHERMIC WELDING OF #10 AWG AND SMALLER WIRE.

2. USE COPPER SLEEVE ON #2 AWG JOINT BONDING WIRES

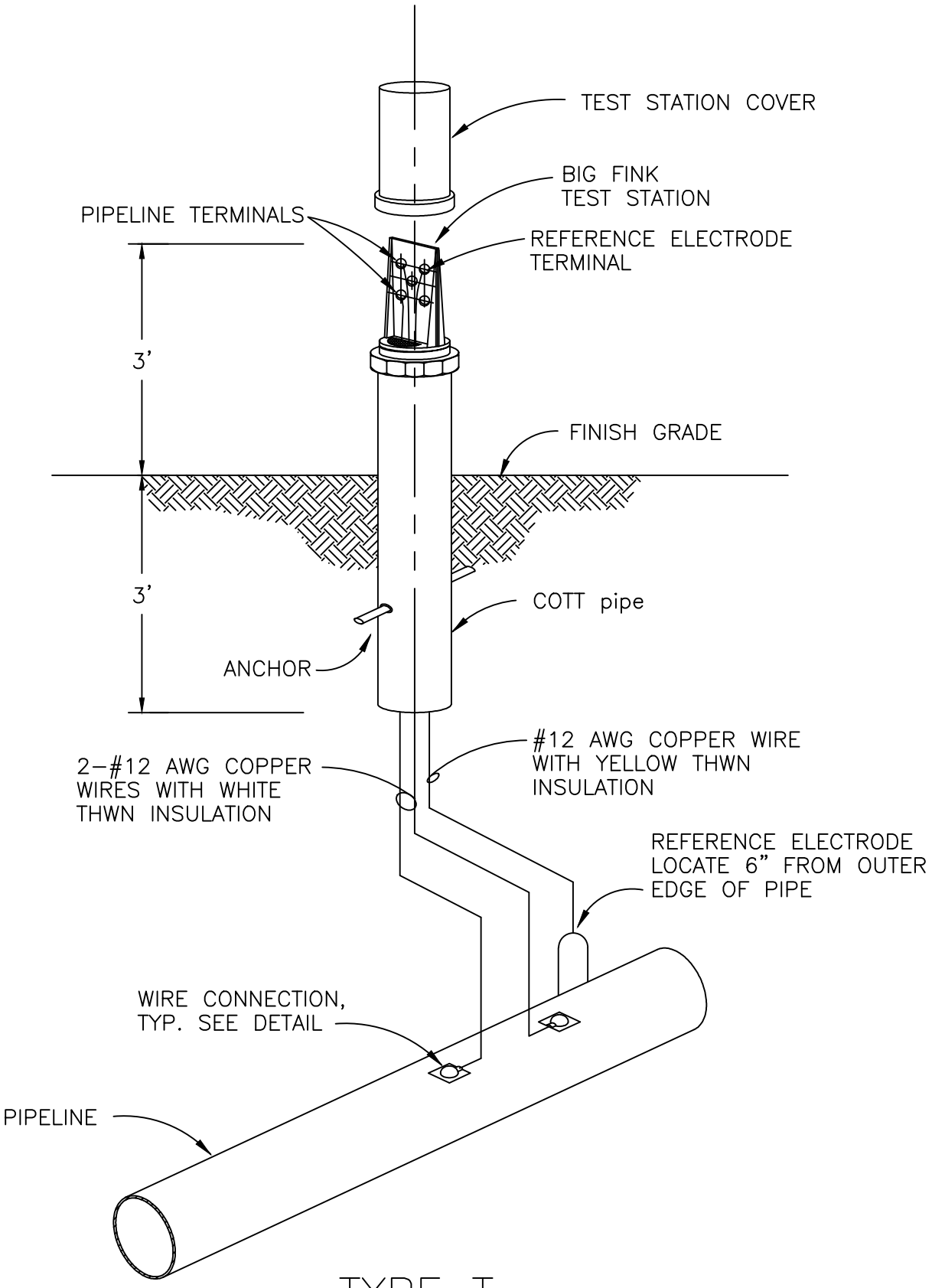
3. WELDER AND CARTRIDGE SIZE VARIES ACCORDING TO WIRE SIZE AND PIPE MATERIAL. CONSULT WELDER MANUFACTURER FOR RECOMMENDED WELDER AND CARTRIDGE.

4. APPLY WELD CAP DIRECTLY TO PIPE–NOT TO PIPE WRAP. USE PRIMER IF REQ'D BY MFR. COMPLETELY ENCIRCLE WIRE WITHIN ELASTOMER.

5. REPLAIR ANY DAMAGED COATING NOT COVERED BY WELD CAP ACCORDING TO COATING MFGR'S. RECOMMENDATIONS.

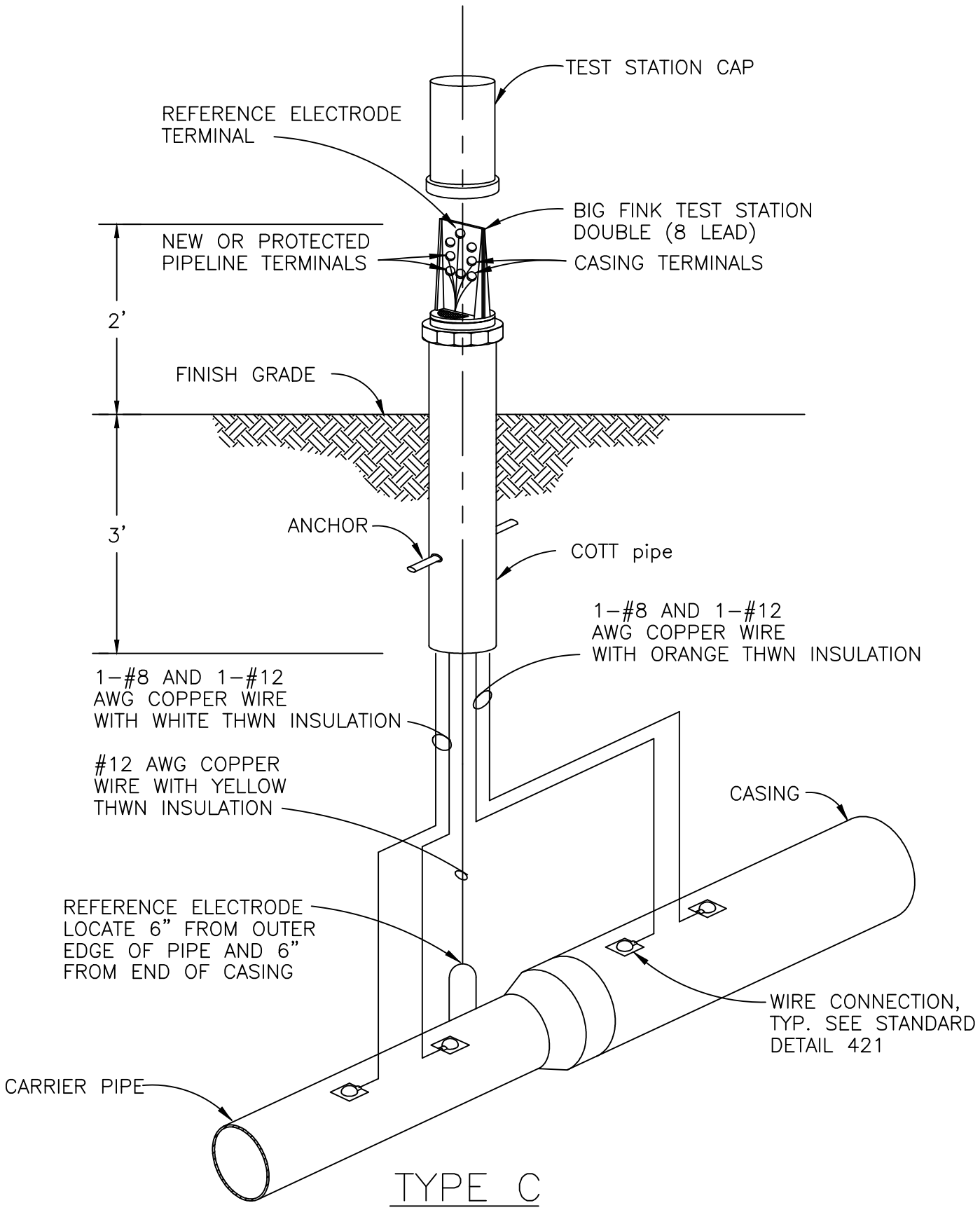
6. COVER EXOTHERMIC WELD WITH "GRAY PAD" AS MANUFACTURED BY TAPECOAT.

DRAWN	DRAWN		COMMUNITY DEVELOPMENT CITY OF SCAPPOOSE 34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON STANDARD WIRE CONNECTION FOR STEEL AND DUCTILE IRON PIPE	SCALE N.T.S.
DIV.	DEPT			DATE 2002
REV.	DATE	APPR.		APPR.
				DWG. NO. 421



TYPE T

DRAWN	DRAWN		COMMUNITY DEVELOPMENT CITY OF SCAPPOOSE 34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON STANDARD POST TYPE TEST STATION DETAIL	SCALE N.T.S.
DIV.	DEPT			DATE 2002
REV.	DATE	APPR.		APPR.
				DWG. NO. 422



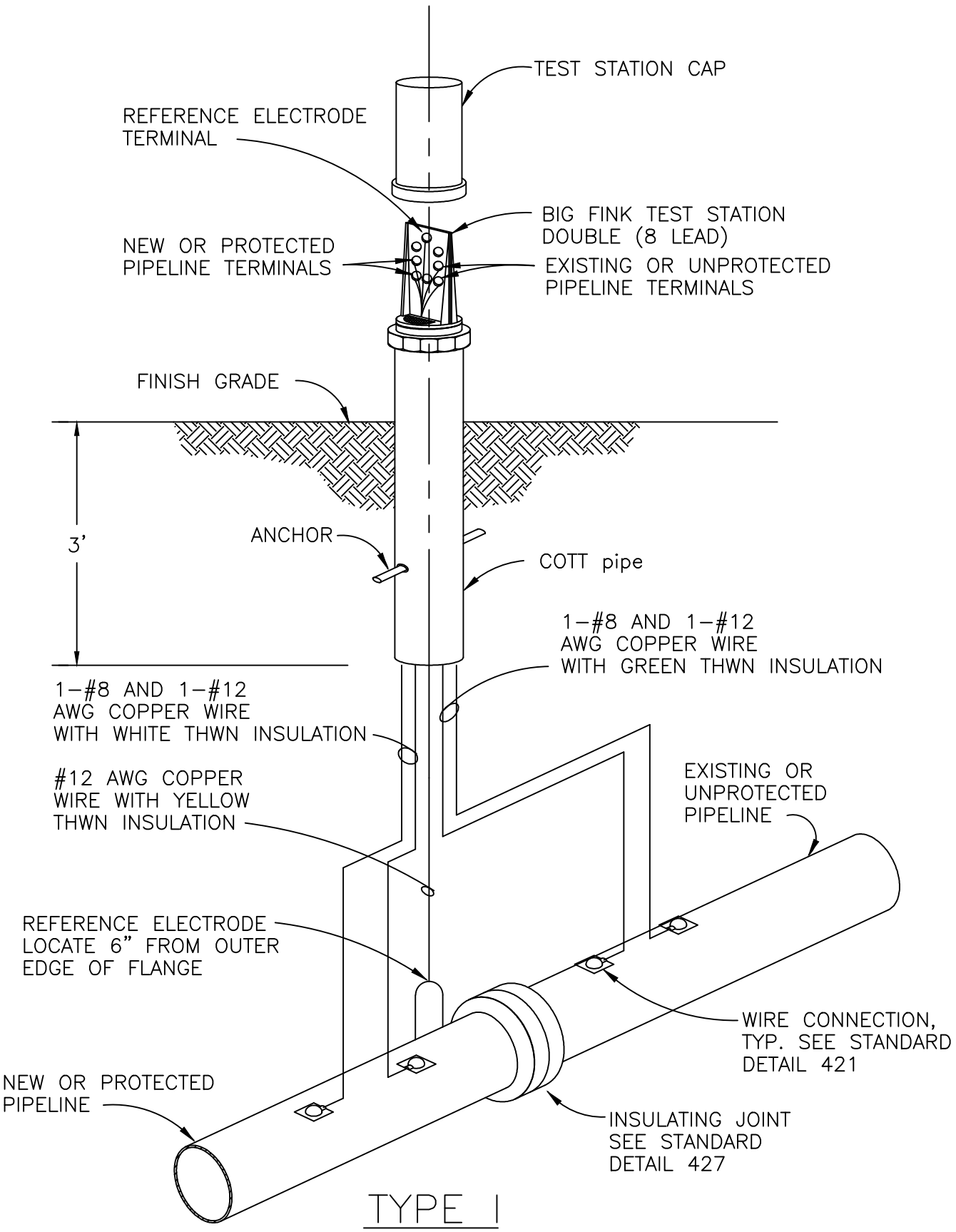
TYPE C

DRAWN	DRAWN	
DIV.	DEPT	
REV.	DATE	APPR.

COMMUNITY DEVELOPMENT
CITY OF SCAPPOOSE
34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON

STANDARD POST TYPE TEST STATION FOR CASTINGS

SCALE	N.T.S.
DATE	2002
APPR.	
DWG. NO.	423



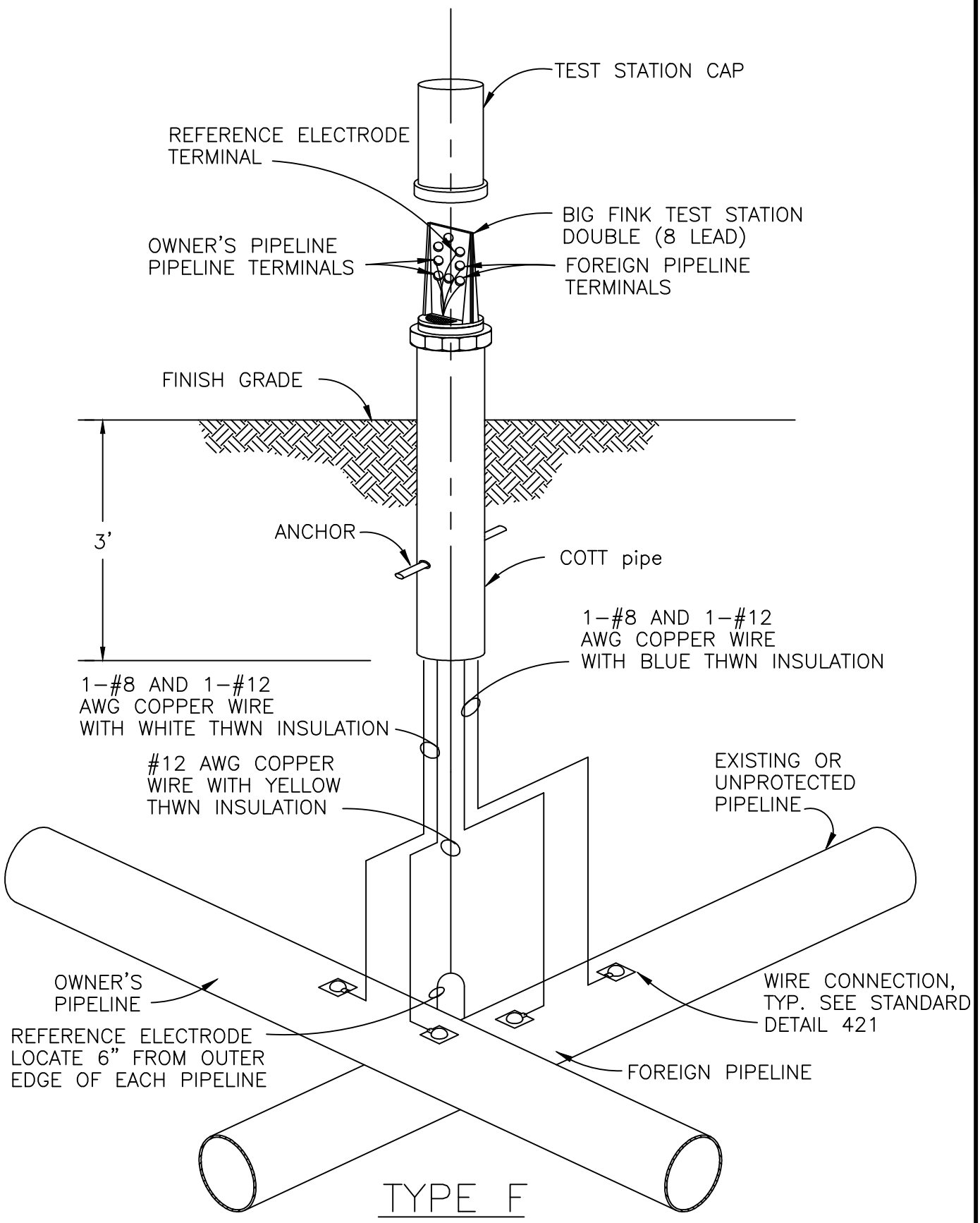
TYPE 1

DRAWN	DRAWN	
DIV.	DEPT	
REV.	DATE	APPR.

COMMUNITY DEVELOPMENT
CITY OF SCAPPOOSE
34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON

STANDARD POST TYPE TEST STATION DETAIL FOR INSULATING JOINT

SCALE	N.T.S.
DATE	2002
APPR.	
DWG. NO.	424

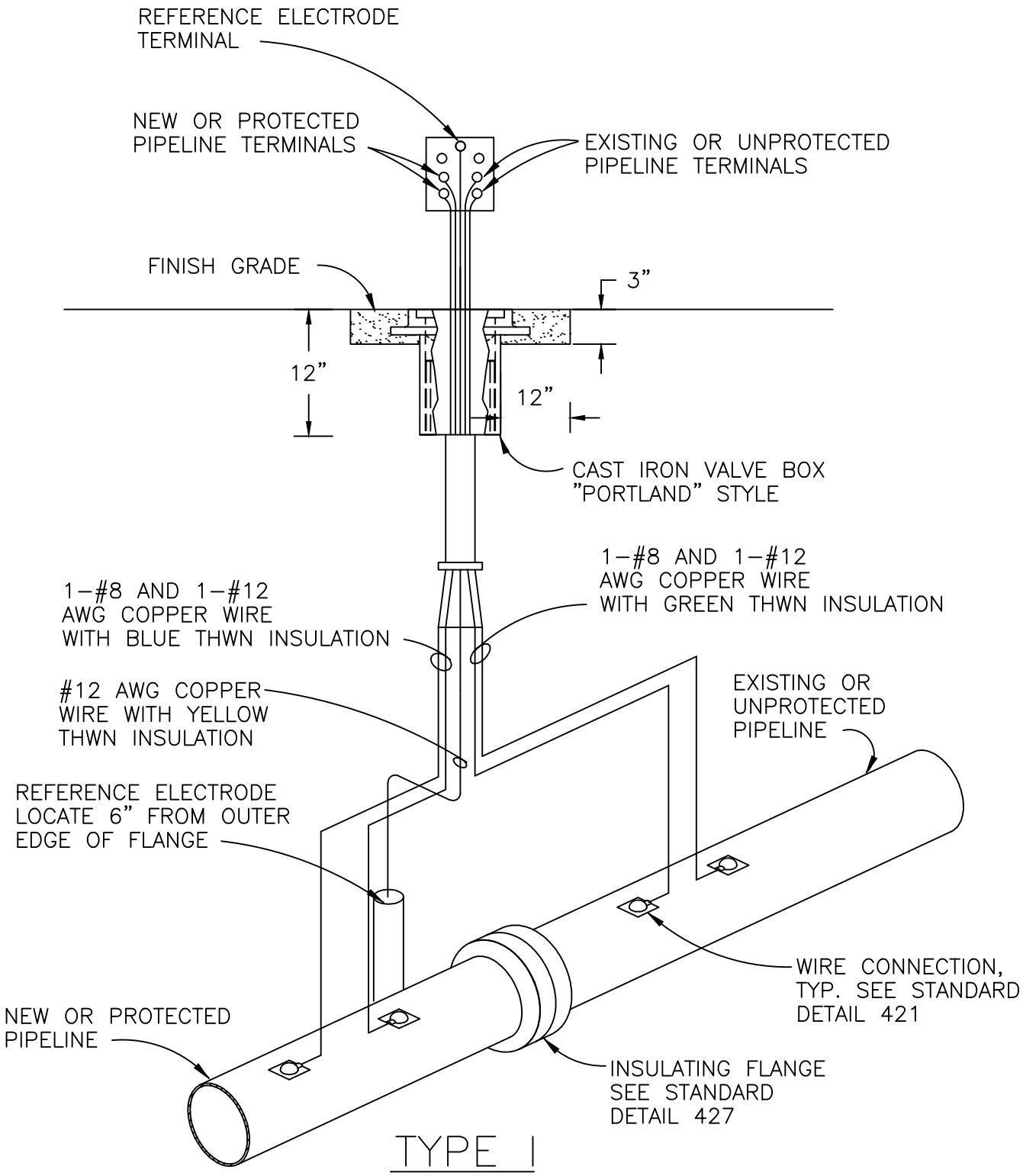


DRAWN	DRAWN	
DIV.	DEPT	
REV.	DATE	APPR.

COMMUNITY DEVELOPMENT
CITY OF SCAPPOOSE
34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON

STANDARD POST TYPE TEST STATION DETAIL FOR CROSSINGS

SCALE	N.T.S.
DATE	2002
APPR.	
DWG. NO.	425



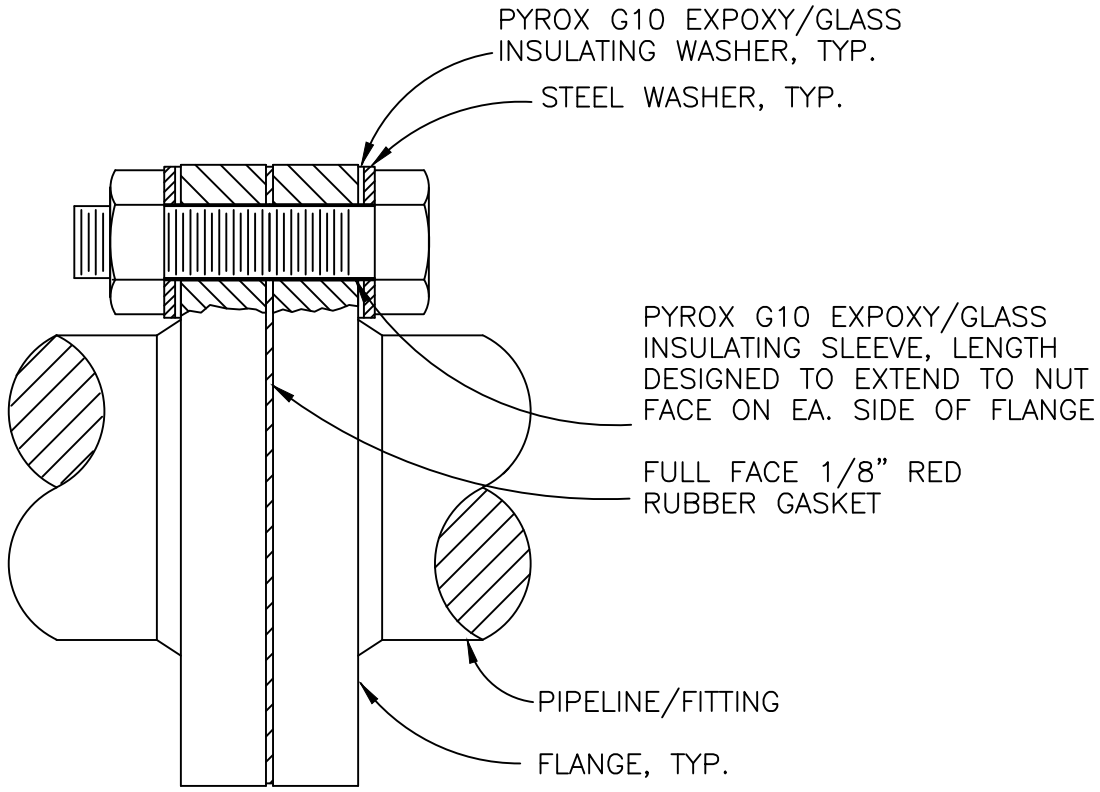
TYPE I

DRAWN	DRAWN	
DIV.	DEPT	
REV.	DATE	APPR.

COMMUNITY DEVELOPMENT
CITY OF SCAPPOOSE
34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON

STANDARD FLUSH MOUNTED TEST STATION

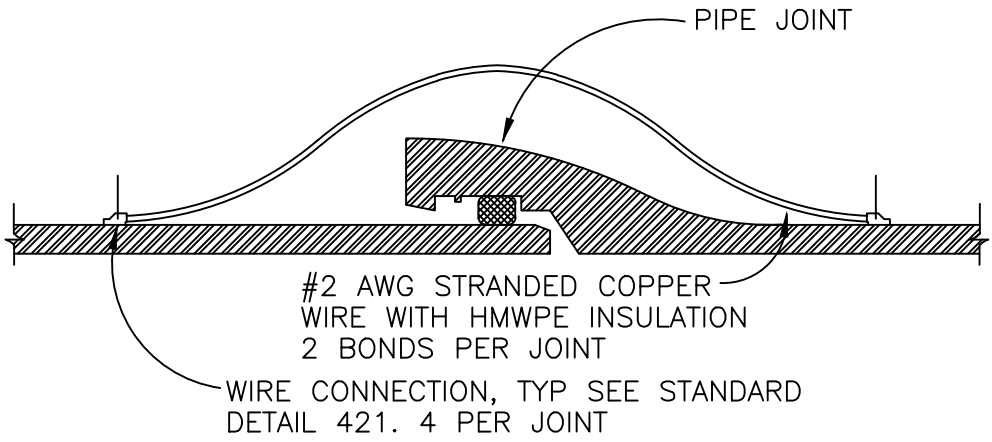
SCALE	N.T.S.
DATE	2002
APPR.	
DWG. NO.	426



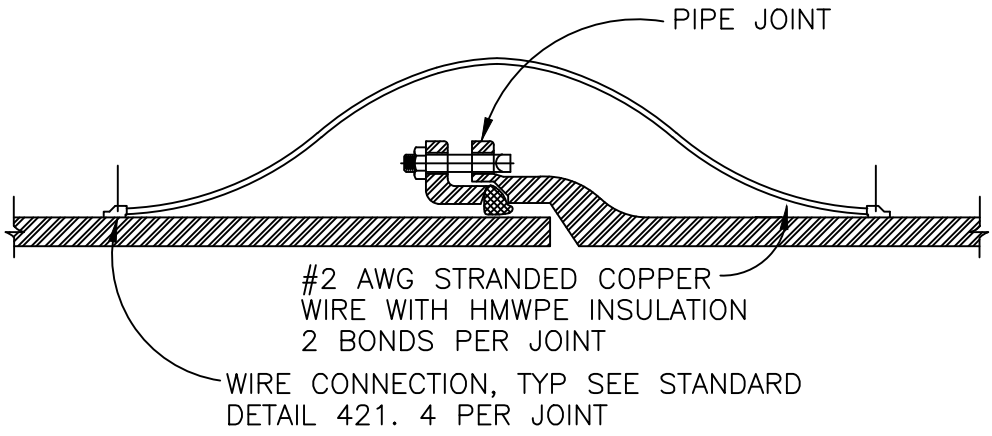
NOTES:

1. ABOVE GRADE INSULATING FLANGE INSTALLATION AS SHOWN.
2. FOR BURIED OR SUBMERGED INSULATION FLANGE INSTALLATION DO NOT INSTALL INSULATING WASHER ON PROTECTED OR NEW SIDE OF FLANGE.
3. COAT BURIED OR SUBMERGED INSULATED FLANGES WITH SPRAY ON UNDERCOATING AFTER ASSEMBLING JOINT AND WRAP WITH A BUTYL RUBBER ADHESIVE, POLYETHYLENE BACKED TAPE.

DRAWN	DRAWN		COMMUNITY DEVELOPMENT CITY OF SCAPPOOSE 34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON STANDARD INSULATING FLANGE	SCALE N.T.S.
DIV.	DEPT			DATE 2002
REV.	DATE	APPR.		APPR.
				DWG. NO. 427

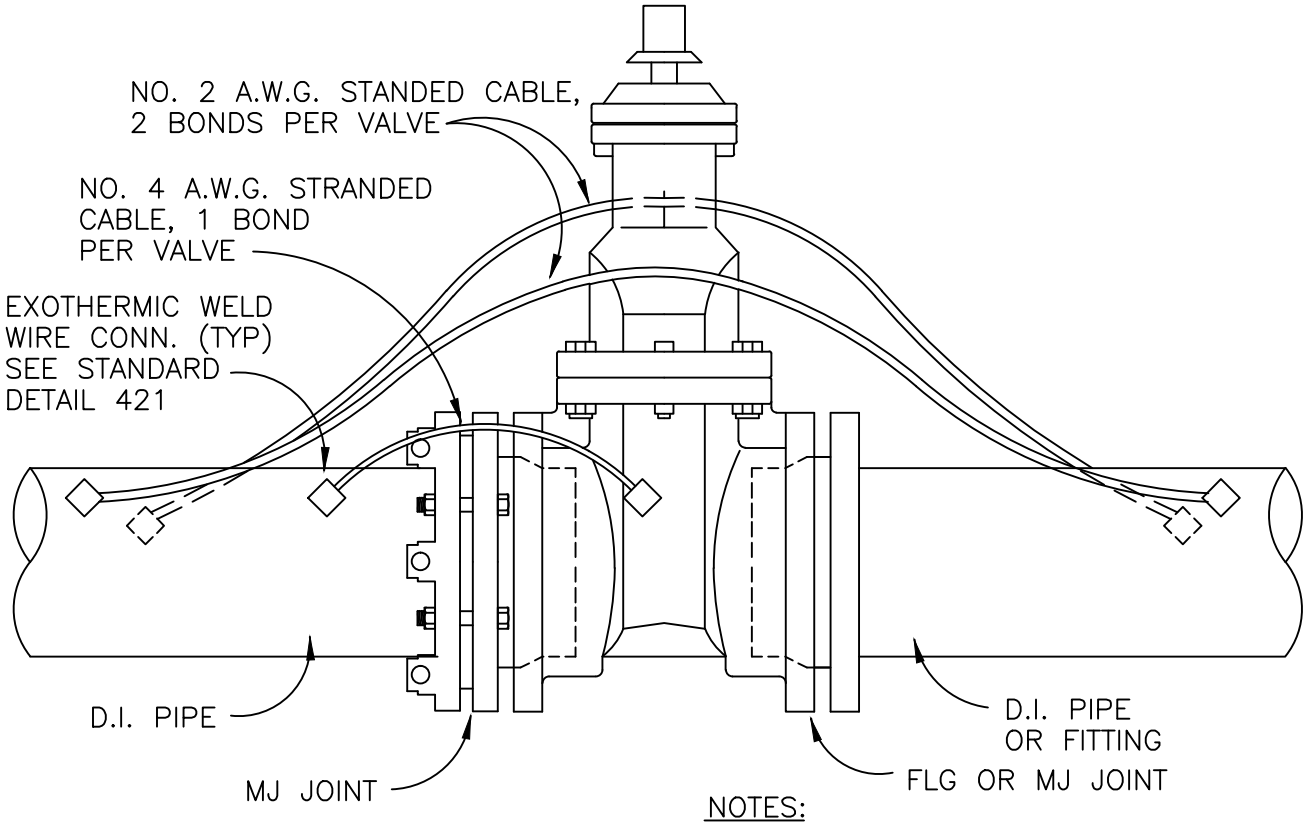


PUSH–ON JOINT BOND



MECHANICAL JOINT BOND

DRAWN	DRAWN		COMMUNITY DEVELOPMENT CITY OF SCAPPOOSE 34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON STANDARD JOINT BOND DETAIL– PUSH–ON AND MECHANICAL JOINT	SCALE N.T.S.
DIV.	DEPT			DATE 2002
REV.	DATE	APPR.		APPR.
				DWG. NO. 428



NOTES:

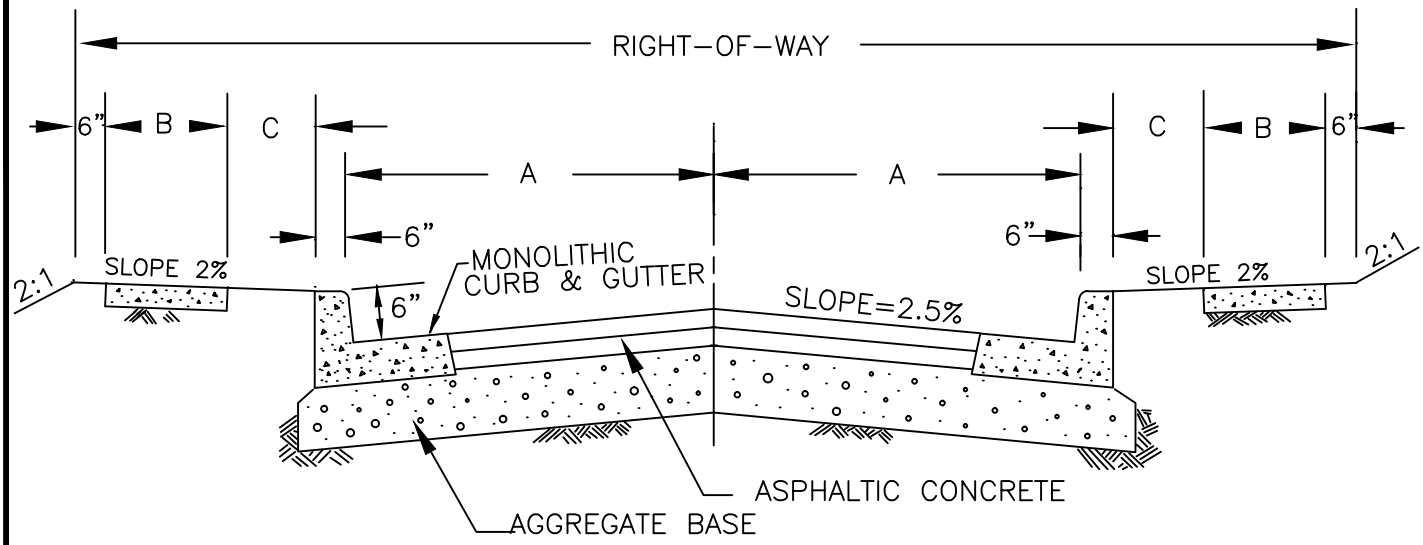
1. ALL WIRE INSULATION IS HMWPE
2. A NO. 2 A.W.G. STRANDED CABLE MAY BE SUBSTITUTED FOR THE NO. 4 A.W.G. STRANDED CABLE.

JOINT BOND–VALVE AND SOLID SLEEVE

DRAWN	DRAWN		COMMUNITY DEVELOPMENT CITY OF SCAPPOOSE 34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON STANDARD JOINT BOND DETAIL–VALVE	SCALE N.T.S.
DIV.	DEPT			DATE 2002
REV.	DATE	APPR.		APPR.
				DWG. NO. 429

TYPICAL STREET SECTION

LOCAL STREETS GREATER THAN 400 FT.



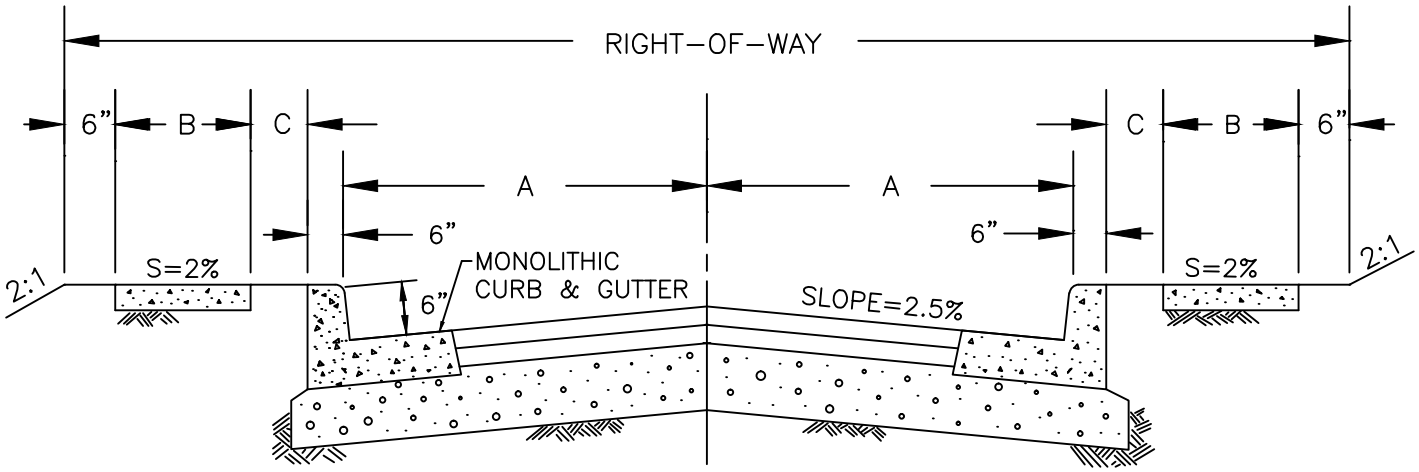
1. ASPHALTIC CONCRETE 1 STAGE CONST. (2 LIFTS)1 1/2" CLASS "C" ON 1 1/2" CLASS "B". 2 STAGE CONST. (2 LIFTS)1 1/2" CLASS "C" ON 2 1/2" CLASS "B".
2. AGGREGATE BASE – 1"–0" CRUSHED ROCK, 8" DEPTH.
3. SUBGRADE AND BASEROCK SHALL BE COMPACTED TO 95% RELATIVE DENSITY PER AASHTO T–180.
4. ALTERNATIVE PAVEMENT MATERIALS WILL BE CONSIDERED FOR APPROVAL BY MANAGER.
5. SIDEWALKS IN COMMERCIAL, INDUSTRIAL, AND HILLSIDE CONSTRAINT DISTRICT SHALL ABUT THE CURB. * SIDEWALK WIDTH IN COMMERCIAL/INDUSTRIAL AREA SHALL BE 6' IN WIDTH.
6. WHERE NO PLANTER STRIP IS REQUIRED, THE SIDEWALK SHALL HAVE A MINIMUM 5' CLEAR OF ALL OBSTACLES, UNLESS APPROVED BY CITY ENGINEER.
7. LOCAL STREETS PROJECTED TO HAVE AN AVERAGE DAILY TRAFFIC (ADT) OVER 1000 VEHICLES PER DAY SHALL BE CONSTRUCTED TO A NEIGHBORHOOD COLLECTOR STANDARD.
8. FIRE HYDRANTS BEHIND THE WALK ON HILLSIDE CONSTRAINT DISTRICT AND COMMERCIAL/INDUSTRIAL DISTRICTS REQUIRE A 5FT. BY 5FT. EASEMENT.

STREET AND RIGHT–OF–WAY WIDTHS

FUNCTIONAL CLASSIFICATION	RIGHT–OF–WAY	A PAVEMENT WIDTH	B SIDEWALK WIDTH	C PLANTER STRIP WIDTH
LOCAL STREET	54'	16'	5'	N/A
LS SLOPE HAZARD AREA	40'	14'	5' *	N/A
LS COMMERCIAL INDUSTRIAL DISTRICT	54'	20'	6' *	N/A

DRAWN MRM	COMMUNITY DEVELOPMENT CITY OF SCAPPOOSE 34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON	SCALE N.T.S.
DIV. TRANSPORTATION		DATE 2002
REV. / DATE / APPR.		APPR.
	LOCAL TRANSITIONAL STREET SECTION	DWG. NO. 500

TYPICAL STREET SECTION



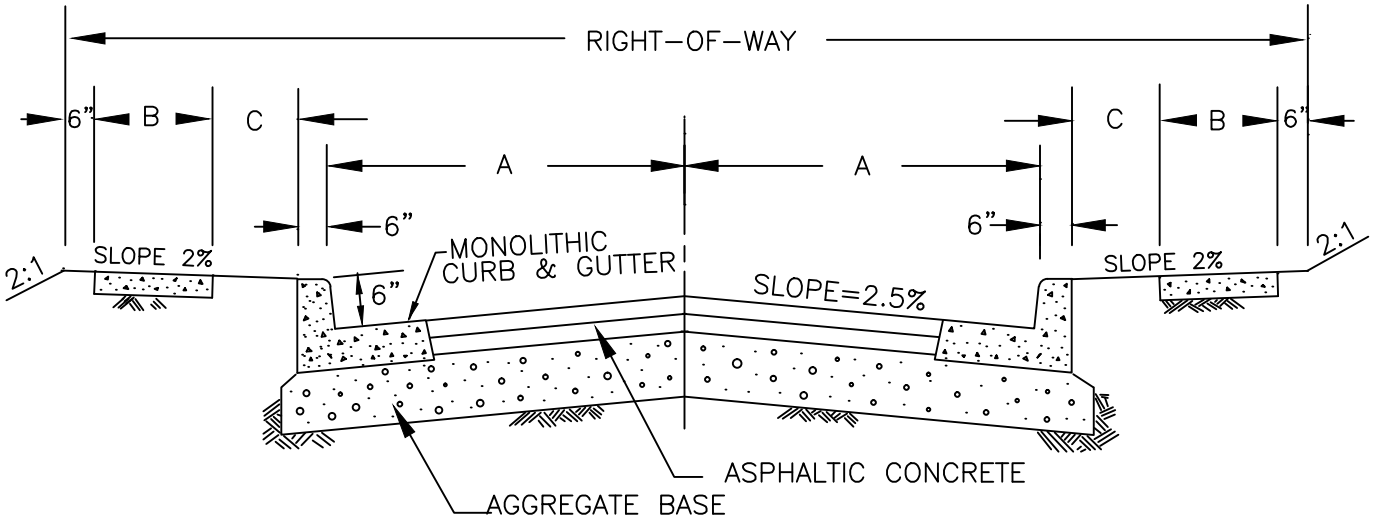
1. A PAVEMENT DESIGN TO ACCOMMODATE ANTICIPATED TRAFFIC LOADINGS AND EXISTING SOIL CONDITIONS SHALL BE SUBMITTED TO THE CITY ENGINEER FOR APPROVAL.
2. SUBGRADE AND BASEROCK SHALL BE COMPACTED TO 95% RELATIVE DENSITY PER AASHTO T–180.
3. TYPICAL STRUCTURAL SECTION SHALL CONSIST OF ASPHALTIC CONCRETE ON CRUSHED ROCK. BASE ALTERNATIVE MATERIALS WILL BE CONSIDERED FOR APPROVAL BY CITY ENGINEER.
4. SIDEWALK IN RESIDENTIAL AREAS SHALL BE 5' IN WIDTH AND LOCATED SIX INCHES OFF RIGHT–OF–WAY LINE WITH A PLANTER STRIP.
5. SIDEWALK IN COMMERCIAL AND INDUSTRIAL AREAS SHALL BE 6' IN WIDTH AND SHALL ABUT THE CURB.
6. THE SIDEWALK SHALL HAVE A MINIMUM 5' CLEAR OF ALL OBSTACLES, UNLESS APPROVED BY CITY ENGINEER.
7. COLLECTORS IN COMMERCIAL AND INDUSTRIAL AREAS SHALL HAVE A PAVEMENT WIDTH OF 44'.
8. NEIGHBORHOOD COLLECTORS IN COMMERCIAL AND INDUSTRIAL AREAS SHALL HAVE A RIGHT–OF–WAY WIDTH OF 60' AND A PAVEMENT WIDTH OF 40'.

STREET AND RIGHT–OF–WAY WIDTHS

FUNCTIONAL CLASSIFICATION	RIGHT–OF–WAY	A PAVEMENT WIDTH	B SIDEWALK WIDTH	C PLANTER STRIP WIDTH
MAJOR COLLECTOR	66'	22'	6'	N/A
NEIGHBORHOOD COLLECTOR IN COMMERCIAL OR INDUSTRIAL AREA	60'	18'	6'	NA

DRAWN	MRM		COMMUNITY DEVELOPMENT CITY OF SCAPPOOSE 34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON COLLECTOR STREET SECTION	SCALE N.T.S.
DIV.	TRANSPORTATION			DATE 2002
REV.	DATE	APPR.		APPR.
				DWG. NO. 501

TYPICAL STREET SECTION



1. A PAVEMENT DESIGN TO ACCOMMODATE ANTICIPATED TRAFFIC LOADINGS AND EXISTING SOIL CONDITIONS SHALL BE SUBMITTED TO THE CITY ENGINEER FOR APPROVAL.
2. SUBGRADE AND BASEROCK SHALL BE COMPACTED TO 95% RELATIVE DENSITY PER AASHTO T–180.
3. ALTERNATIVE PAVEMENT MATERIALS WILL BE CONSIDERED FOR APPROVAL BY CITY ENGINEER.
4. SIDEWALKS SHALL ABUT THE CURB.
5. THE SIDEWALK SHALL HAVE A MINIMUM 5' CLEAR OF ALL OBSTACLES, UNLESS APPROVED BY CITY ENGINEER.

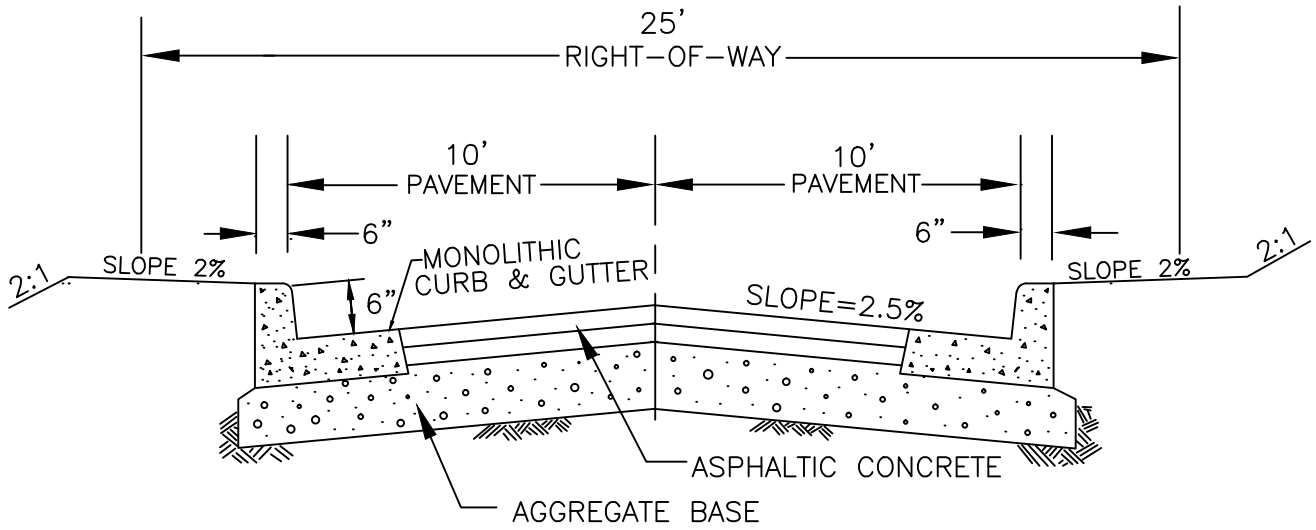
STREET AND RIGHT–OF–WAY WIDTHS

FUNCTIONAL CLASSIFICATION	RIGHT–OF–WAY	A PAVEMENT WIDTH	B SIDEWALK WIDTH	C PLANTER STRIP WIDTH
MAJOR ARTERIAL	100'	37'	6'	6'
MINOR ARTERIAL	72'	22'	6'	6'

DRAWN MRM			COMMUNITY DEVELOPMENT	SCALE N.T.S.
DIV. TRANSPORTATION			CITY OF SCAPPOOSE	DATE 2002
REV.	DATE	APPR.	34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON	APPR.
			ARTERIAL STREET SECTION	DWG. NO. 502

TYPICAL STREET SECTION

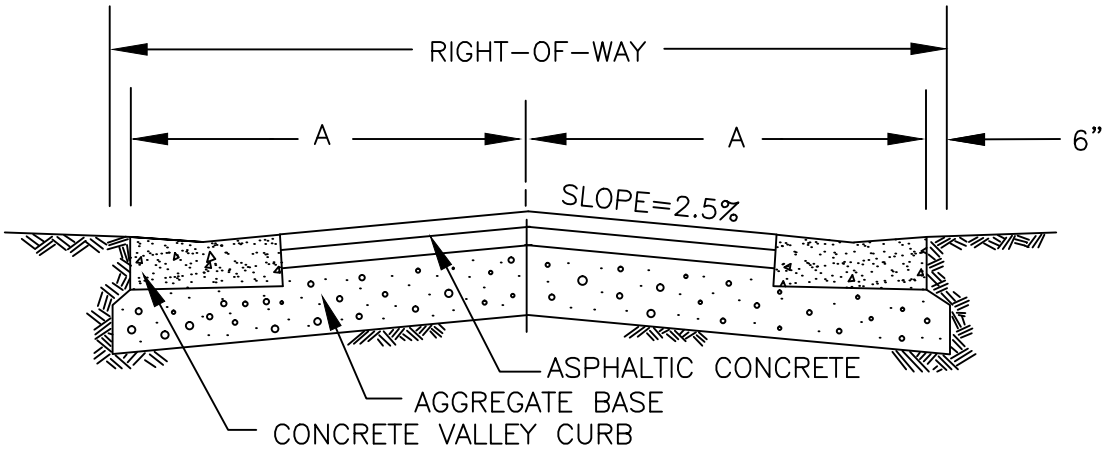
MINOR ACCESS STREET LESS THAN 150 FT.



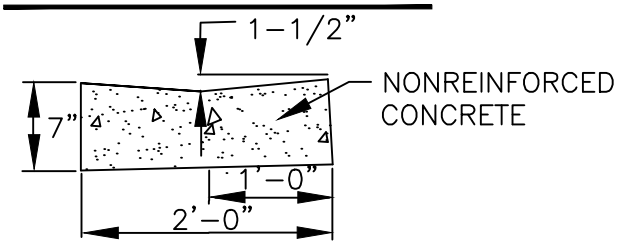
1. ASPHALTIC CONCRETE 1 STAGE CONST.(2 LIFTS)1 1/2" CLASS "C" ON 1 1/2" CLASS "B".
   2 STAGE CONST.(2 LIFTS)1 1/2" CLASS "C" ON 2 1/2" CLASS "B".
2. AGGREGATE BASE – 1"–0" CRUSHED ROCK, 8" DEPTH.
3. SUBGRADE AND BASEROCK SHALL BE COMPACTED TO 95% RELATIVE DENSITY PER AASHTO T–180.
4. ALTERNATIVE PAVEMENT MATERIALS WILL BE CONSIDERED FOR APPROVAL BY MANAGER.
5. THE MAXIMUM LENGTH OF A MINOR ACCESS STREET SHALL BE 150'.
6. PUBLIC PARKING FOR VISITORS (3–4 SPACES) AND A BRANCH TYPE TURNAROUND SHALL BE PROVIDED AT THE END OF THE MINOR ACCESS STREET. (SEE DETAIL # 509)
7. A "DEAD END" SIGN SHALL BE POSTED AT THE ENTRANCE TO THE MINOR ACCESS STREET.
8. "NO PARKING" SHALL BE POSTED FOR THE ENTIRE LENGTH OF THE MINOR ACCESS STREET.
9. THERE IS NO REQUIREMENT FOR A SIDEWALK OR PLANTER STRIP.

DRAWN M.R.M.			COMMUNITY DEVELOPMENT	SCALE N.T.S.
DIV. TRANSPORTATION			CITY OF SCAPPOOSE	DATE 2002
REV.	DATE	APPR.	34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON	APPR.
			MINOR ACCESS STREET	DWG. NO. 503

TYPICAL STREET SECTION



VALLEY CURB DETAIL



1. ASPHALTIC CONCRETE 1 STAGE CONST.(2 LIFTS)1 1/2" CLASS "C" ON 1 1/2" CLASS "B".
   2 STAGE CONST.(2 LIFTS)1 1/2" CLASS "C" ON 2 1/2" CLASS "B".
2. AGGREGATE BASE – 1"-0" CRUSHED ROCK, 8" DEPTH.
3. SUBGRADE AND BASEROCK SHALL BE COMPACTED TO 95% RELATIVE DENSITY PER AASHTO T-180.
4. ALTERNATIVE PAVEMENT MATERIALS WILL BE CONSIDERED FOR APPROVAL BY MANAGER.
5. PCC CURB OR VALLEY GUTTER SHALL BE 3000 PSI AT 28 DAYS.
6. "NO PARKING" SHALL BE POSTED THE ENTIRE LENGTH OF ALLEY IN RESIDENTIAL AND COMMERCIAL/INDUSTRIAL DISTRICTS.
7. FIRE HYDRANTS WHEN REQUIRED ARE TO BE LOCATED OUTSIDE THE R-O-W IN A 5' BY 5' EASEMENT.

STREET AND RIGHT-OF-WAY WIDTHS

FUNCTIONAL CLASSIFICATION	RIGHT-OF-WAY	A PAVEMENT WIDTH	SIDEWALK WIDTH	PLANTER STRIP WIDTH
ALLEY RESIDENTIAL DISTRICT	20'	10'	N/A	N/A
ALLEY-COMM. INDUSTRIAL DISTRICT	20'	10'	N/A	N/A

DRAWN M.R.M.		
DIV. TRANSPORTATION		
REV.	DATE	APPR.

COMMUNITY DEVELOPMENT
CITY OF SCAPPOOSE
34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON

ALLEY STREET SECTION

SCALE	N.T.S.
DATE	2002
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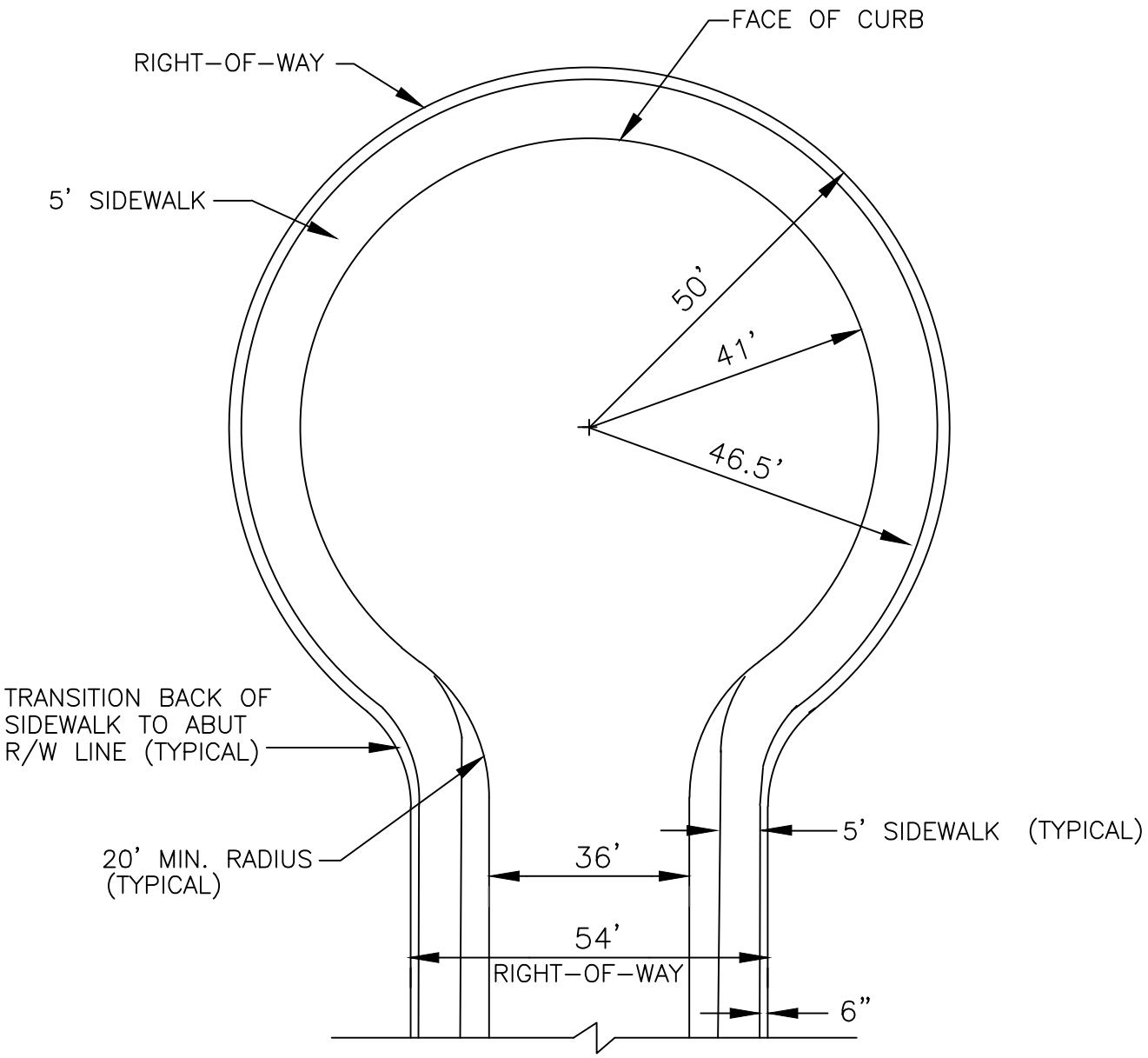
DWG. NO.	506



PAVEMENT WIDTH EXCEPTIONS:

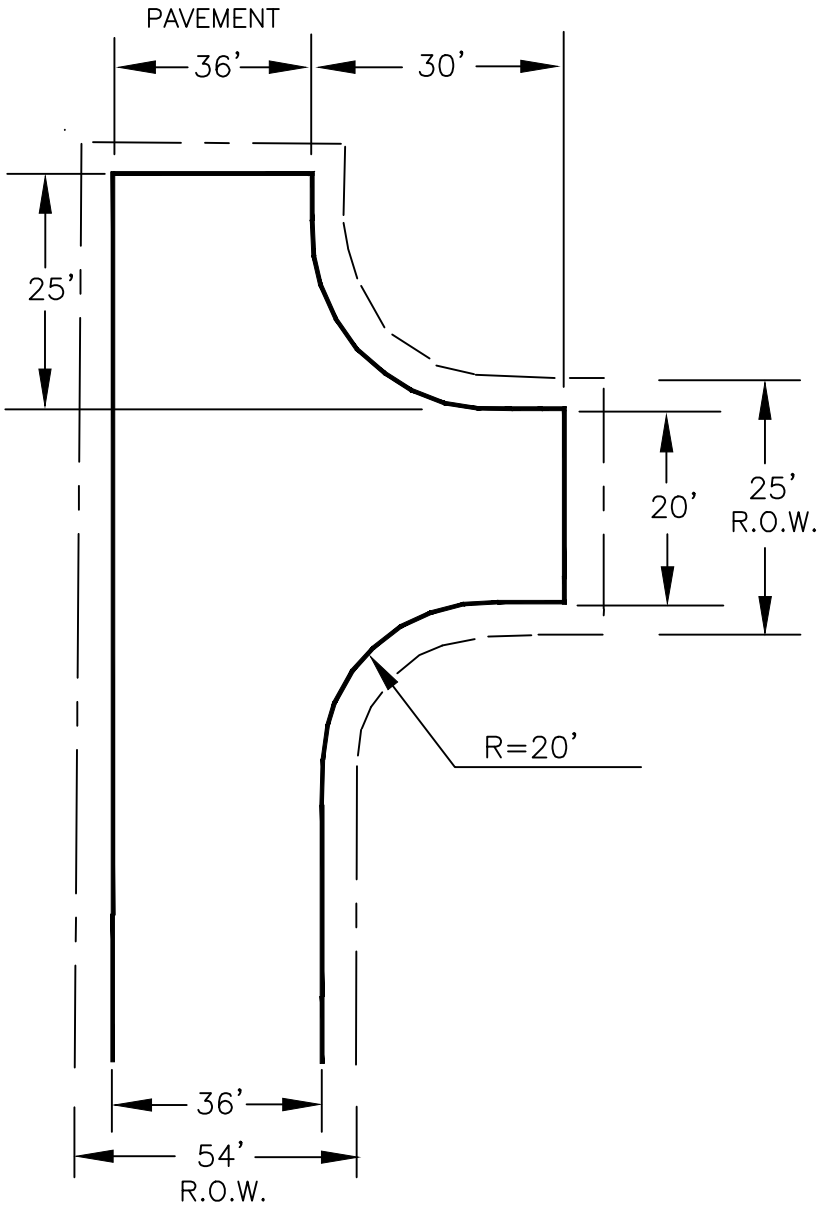
1. A 28' WIDTH MAY BE ALLOWED WITHIN THE SLOPE HAZARD AREA WITH CITY ENGINEER'S APPROVAL.
2. THE SIDEWALK IS TO BE LOCATED NEXT TO THE CURB ON ALL CUL–DE–SAC BULBS AND THE ENTIRE LENGTH OF THE CUL–DE–SAC IN THE SLOPE HAZARD AREA.
3. THE SIDEWALK SHALL HAVE A MINIMUN 5' CLEAR OF ALL OBSTACLES, UNLESS APPROVED BY THE CITY ENGINEER.
4. NO FIRE HYDRANTS ARE TO BE LOCATED IN THE CUL–DE–SAC AREA.

DRAWN	MRM	
ENGR.	TRANSPORTATION	
REV.	DATE	APPR.

COMMUNITY DEVELOPMENT
CITY OF SCAPPOOSE
34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON

STANDARD CUL–DE–SAC

SCALE	N.T.S.
DATE	2002
APPR.	
DWG. NO.	508



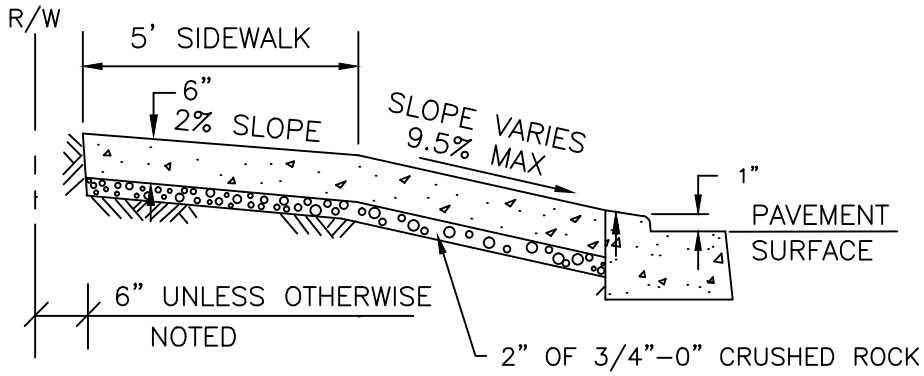
1. BRANCH TURNAROUND TO BE USED AT THE END OF A MINOR ACCESS STREET.
2. A "DEAD–END" SIGN SHALL BE POSTED AT ENTRANCE TO THE MINOR ACCESS STREET.
3. "NO PARKING" SHALL BE POSTED FOR THE ENTIRE MINOR ACCESS STREET.
4. THE MAXIMUM LENGTH OF THE MINOR ACCESS STREET SHALL BE 150 FT. TO THE END OF THE TURNAROUND.
5. NO FIRE HYDRANTS ARE TO BE LOCATED ON A MINOR ACCESS STREET WITH A BRANCH TURNAROUND.

DRAWN MRM		
DIV. TRANSPORTATION		
REV.	DATE	APPR.

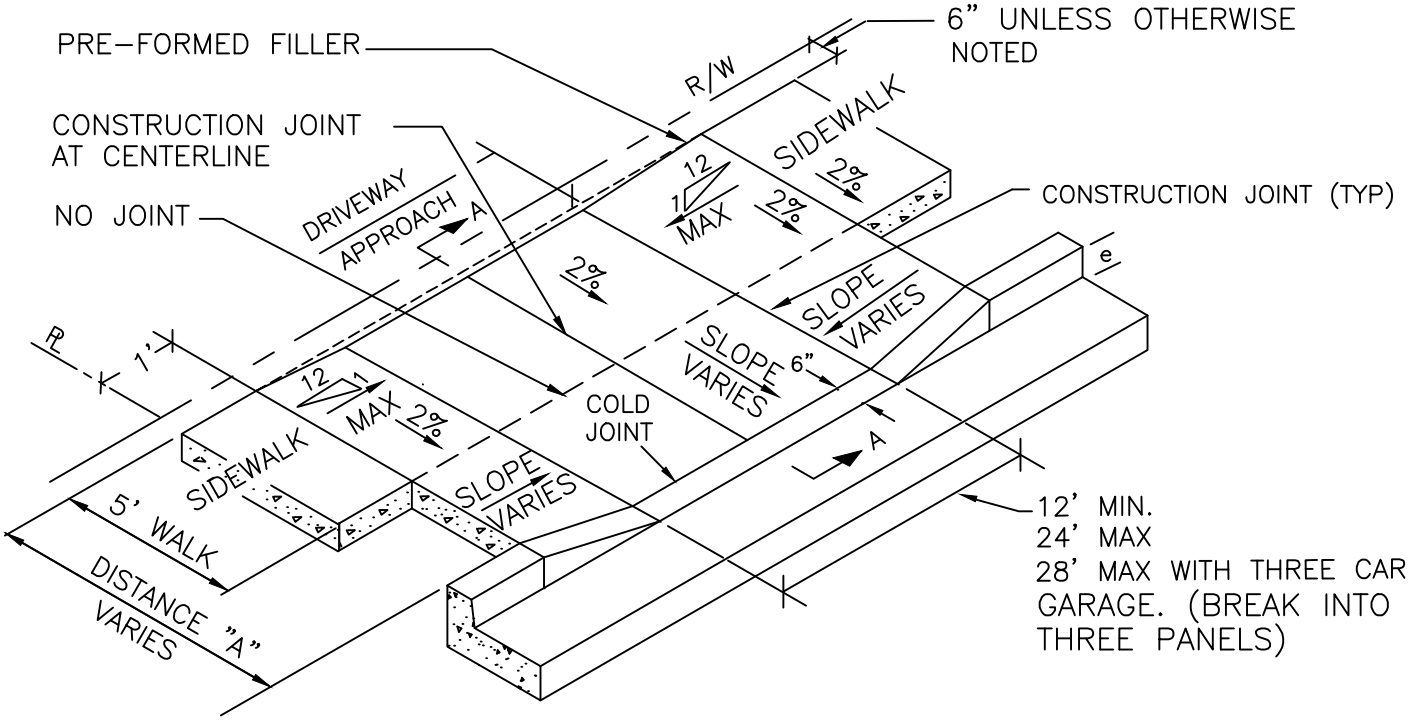
COMMUNITY DEVELOPMENT
CITY OF SCAPPOOSE
34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON

BRANCH TURNAROUND

SCALE	N.T.S.
DATE	2002
APPR.	
DWG. NO.	509

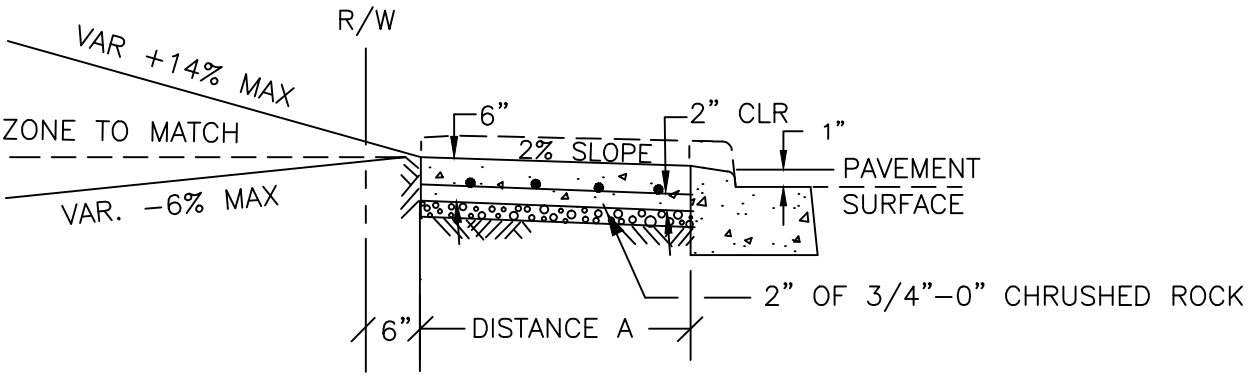


SECTION A – A

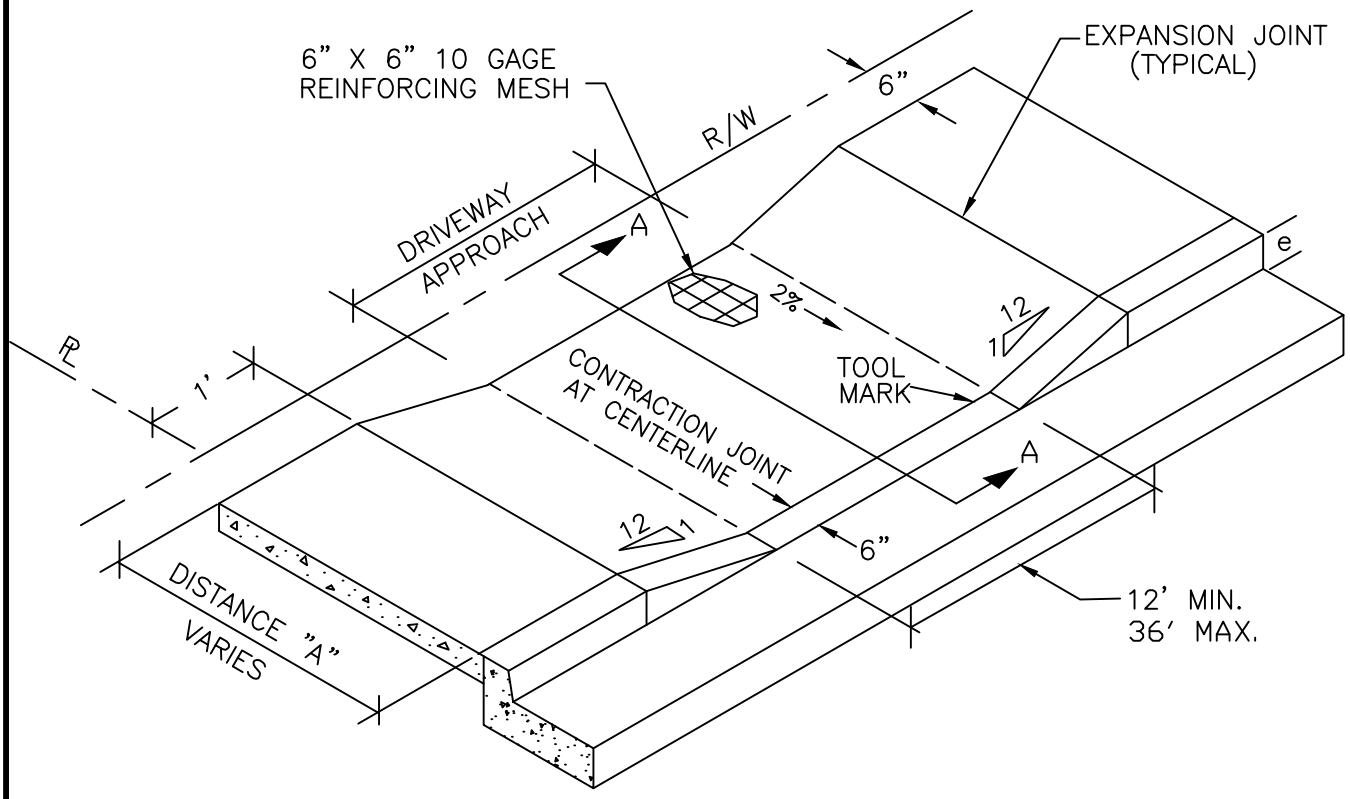


1. DISTANCE "A" VARIES WITH STREET FUNCTIONAL CLASSIFICATION. SLOPE WILL VARY WITH DISTANCE "A".
2. CONSTRUCTION JOINTS SHALL BE 1/8" TO 1/4" WIDE. DEPTH OF THE JOINT SHALL BE A MINIMUM OF 1/3 THE THICKNESS OF THE CONCRETE.
3. ALL SURFACES SHALL BE LIGHTLY BROOMED AND EDGED IN A WORKMANLIKE MANNER.
4. SAW CUT EXISTING CURBS WHERE THEY ARE TO BE REMOVED – IF LESS THAN 3' TO EXISTING JOINT REMOVE TO JOINT. EXISTING A/C IN FRONT OF THE APPROACH SHALL BE SAW CUT AND REPLACED WITH HOT MIX.
5. CONCRETE SHALL BE 3000 PSI AT 28 DAYS.
6. SEE STANDARD DRAWING NUMBERS 518 AND 519 FOR CURB EXPOSURE DIMENSION 'e'.

DRAWN	M.R.M.		COMMUNITY DEVELOPMENT	SCALE	N.T.S.
DIV.	TRANSPORTATION		CITY OF SCAPPOOSE	DATE	2002
REV.	DATE	APPR.	34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON	APPR.	
			RESIDENTIAL DRIVEWAY APPROACH	DWG. NO.	510

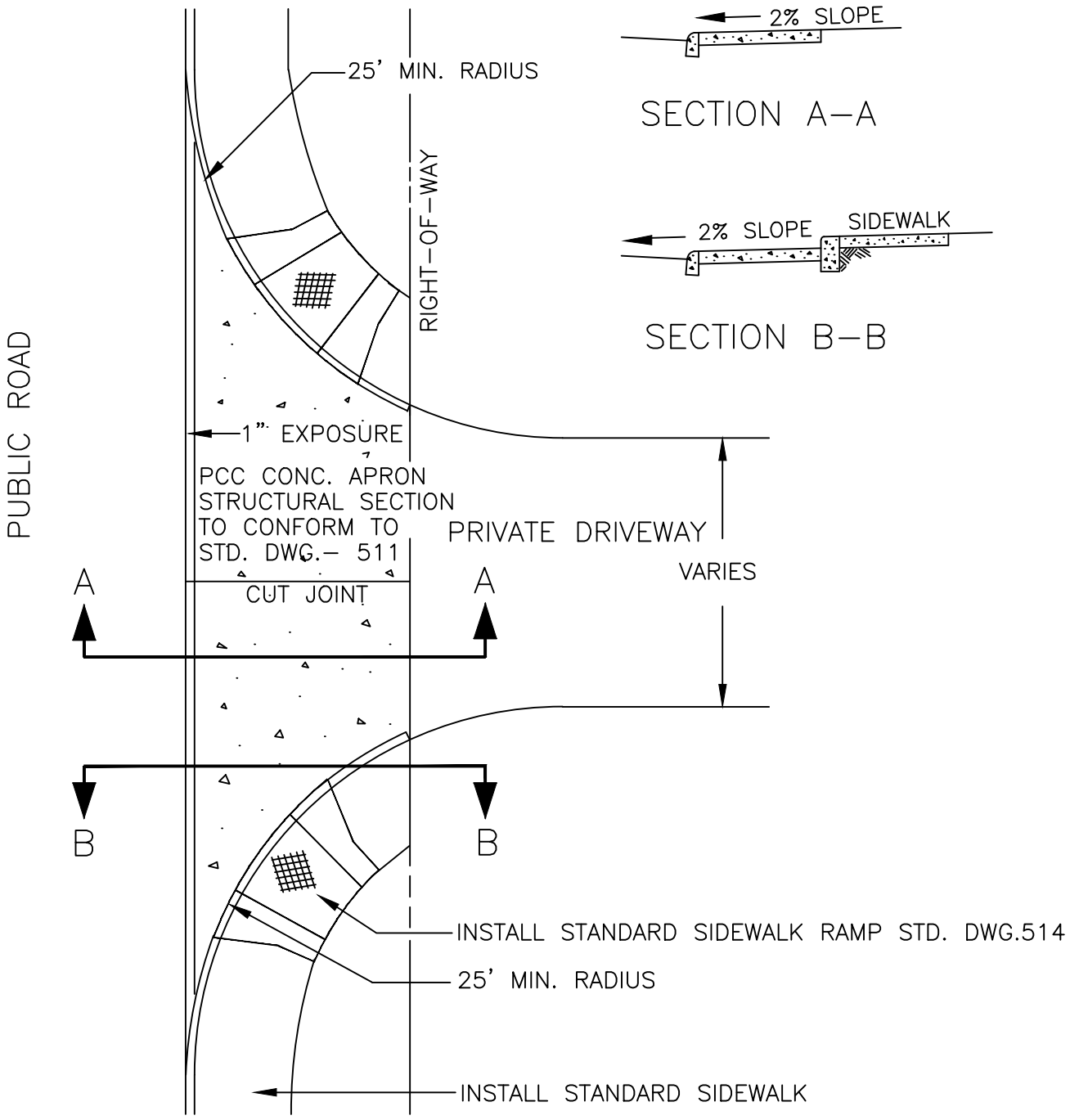


SECTION A−A



1. DISTANCE "A" VARIES WITH STREET FUNCTIONAL CLASSIFICATION.
2. EXPANSION JOINTS SHALL BE 1/2" WIDE AND CONSIST OF APPROVED PRE−FORMED FILLER.
3. CONTRACTION JOINTS SHALL BE 1/8" TO 1/4" WIDE. DEPTH OF THE JOINT SHALL BE A MINIMUM OF 1/3 THE THICKNESS OF THE CONCRETE.
4. ALL SURFACES SHALL BE LIGHTLY BROOMED AND EDGED IN A WORKMANLIKE MANNER.
5. SAW CUT EXISTING CURBS WHERE THEY ARE TO BE REMOVED, IF LESS THAN 3' TO EXISTING JOINT REMOVE TO JOINT. EXISTING A/C IN FRONT OF THE APPROACH SHALL BE SAW CUT AND REPLACED WITH HOT MIX.
6. CONCRETE SHALL BE 3000 PSI AT 28 DAYS.
7. SEE STANDARD DRAWING NUMBERS 518 AND 519 FOR CURB EXPOSURE DIMENSION 'e'.

DRAWN	MRM		COMMUNITY DEVELOPMENT CITY OF SCAPPOOSE 34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON	SCALE N.T.S.
DIV.	TRANSPORTATION			DATE 2002
REV.	DATE	APPR.		APPR.
			COMMERCIAL DRIVEWAY APPROACH	DWG. NO. 511

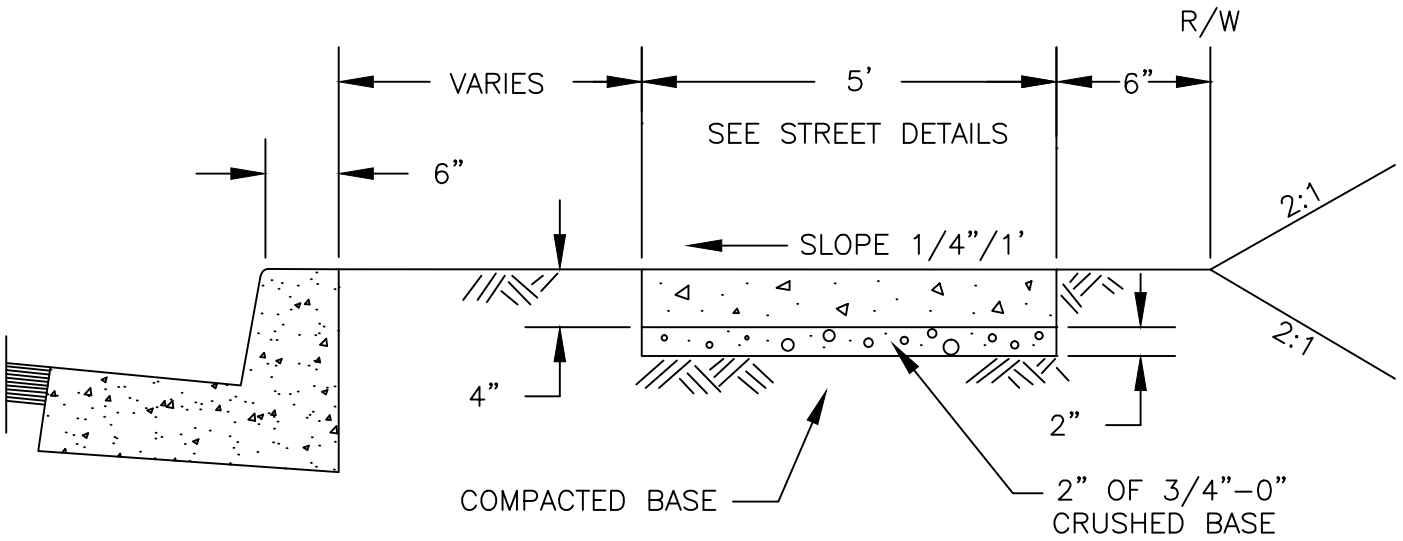


THIS TYPE OF APPROACH TO BE USED FOR HIGH VOLUME TRAFFIC GENERATORS WITH APPROVAL OF CITY ENGINEER.

DRAWN	MRM		COMMUNITY DEVELOPMENT CITY OF SCAPPOOSE 34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON	SCALE	N.T.S.
DIV.	TRANSPORTATION			DATE	2002
REV.	DATE	APPR.		APPR.	
			CURB RETURN DRIVEWAY APPROACH	DWG. NO.	512

TYPICAL SIDEWALK DETAIL

(FOR LOCAL STREET)



1. LOCATION AND WIDTH OF SIDEWALK WILL VARY DEPENDING UPON FUNCTIONAL CLASSIFICATION OF THE STREET. SEE TYPICAL STREET SECTION DRAWINGS ST-500,ST-501,ST-502.

2. PCC SHALL BE 3300 PSI STRENGTH AT 28 DAYS.

3. EXPANSION JOINTS SHALL BE PLACED AT DRIVEWAY APPROACHES, CURB RETURNS AND AT ANY FIXED OBJECT WITHIN THE SIDEWALK AREA. JOINTING MATERIAL AT DRIVEWAYS SHALL CONSIST OF APPROVED FILLER AND SHALL NOT BE LESS THAN 1/2" WIDE.

4. CONTRACTION JOINTS SHALL BE PLACED AT ALL CHANGES OF DIRECTION, POINTS OF CURVATURE AND AT 15' (MAX) INTERVALS. JOINTS SHALL BE 1/8" TO 1/4" WIDE AND A MINIMUM DEPTH OF 1/3 THE THICKNESS OF THE CONCRETE.

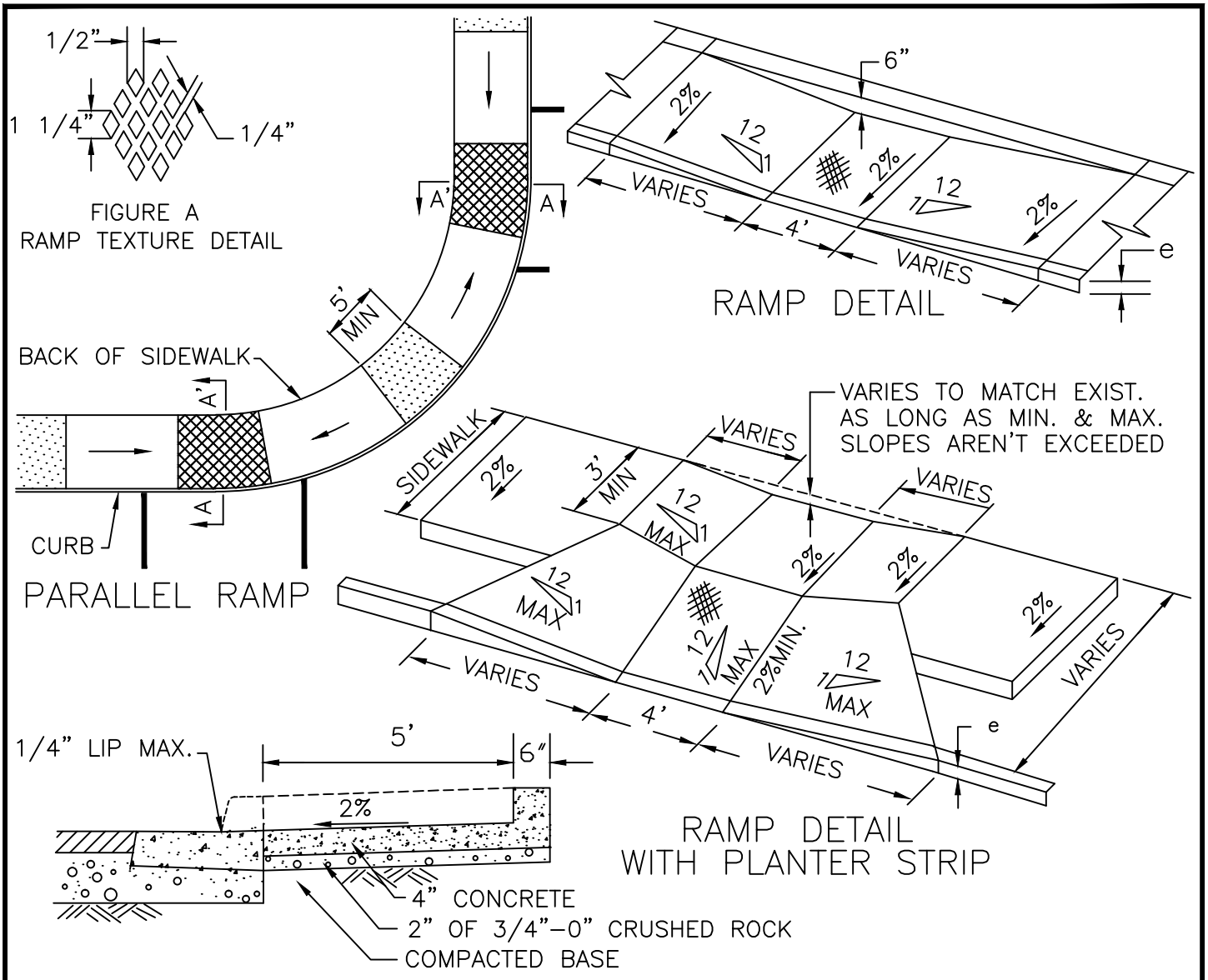
5. ALL SURFACES SHALL BE TROWELED AND BROOMED IN A WORKMANLIKE MANNER. ALL CONTRACTION JOINTS SHALL BE STEEL TROWELED (3 IN. TYP.).

DRAWN MRM		
DIV. TRANSPORTATION		
REV.	DATE	APPR.

COMMUNITY DEVELOPMENT
CITY OF SCAPPOOSE
34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON

TYPICAL SIDEWALK DETAIL

SCALE	N.T.S.
DATE	2002
APPR.	
DWG. NO.	513



1. PCC SHALL BE 3000 PSI STRENGTH AT 28 DAYS.
2. TWO SIDEWALK RAMPS PER CORNER ARE REQUIRED AT ALL NEW INTERSECTIONS.
3. A SINGLE DIAGONAL RAMP MAY BE USED AT ALTERATIONS ONLY, WHEN SITE CONSTRAINTS PROHIBIT INSTALLING TWO RAMPS AND APPROVED BY CITY ENGINEER.
4. REPLACEMENT CURBS MUST BE POURED AGAINST A VERTICAL EDGE OF REMAINING CURB.
5. CONCRETE IN A REPLACEMENT CURB SHALL NOT PROTRUDE PAST THE FACE OF THE CURB IN THE ASPHALT REPLACEMENT AREA.
6. HORIZONTAL AND VERTICAL ALIGNMENT SHALL BE WITHIN 1/8" IN 10 FEET.
7. USE DIAMOND PATTERN IN CENTER RAMP.
8. SEE STANDARD DRAWING NUMBERS 518 AND 519 FOR CURB EXPOSURE DIMENSION 'e'.

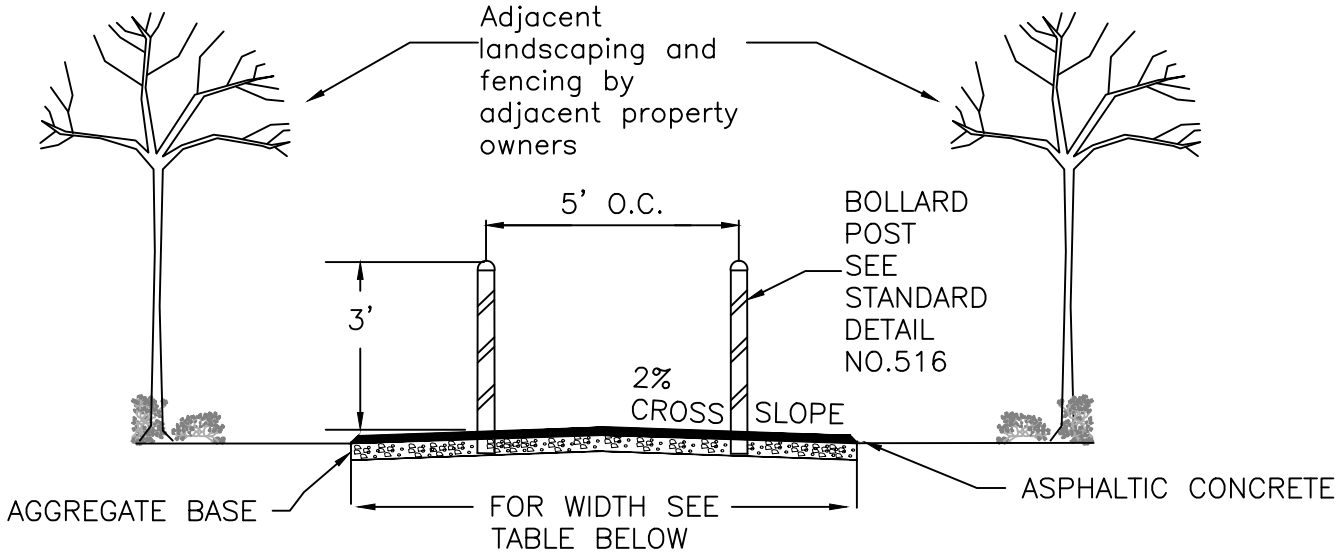
DRAWN	MRM	
DIV.	TRANSPORTATION	
REV.	DATE	APPR.

COMMUNITY DEVELOPMENT
CITY OF SCAPPOOSE
34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON

SIDEWALK RAMP

SCALE	N.T.S.
DATE	2002
APPR.	
DWG. NO.	514

WHERE LIGHTING IS NEEDED
MEET IES STANDARDS FOR
PEDESTRIAN SCALE LIGHTING
– STYLE AND HEIGHT
MAY VARY (UP TO 16' HEIGHT)

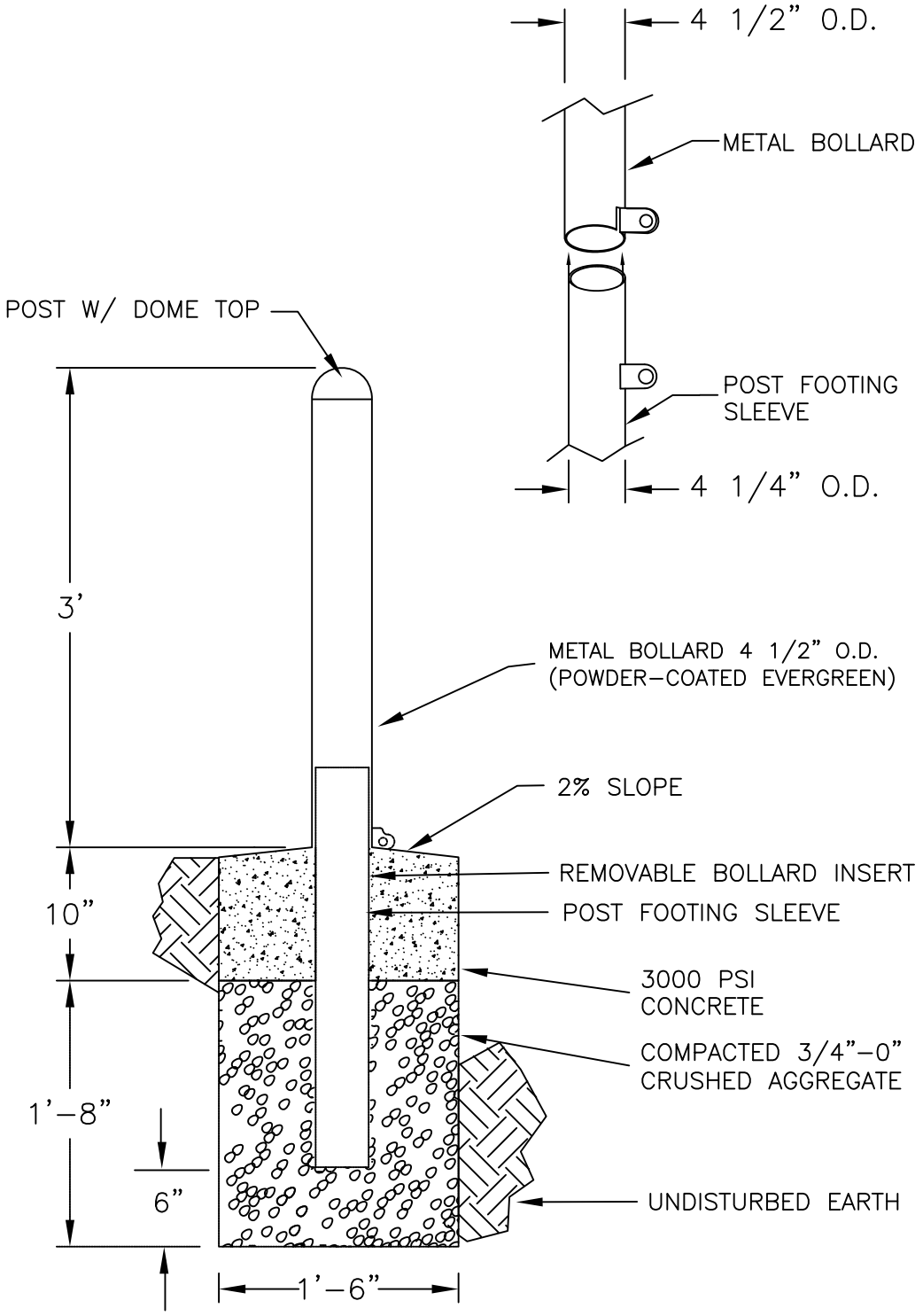


1. ASPHALTIC CONCRETE (2 LIFTS)–1 1/2" CLASS "C" ON 1 1/2" CLASS "B".
2. AGGREGATE BASE – 1"–0 CRUSHED ROCK, 8" DEPTH.
3. SUBGRADE AND BASEROCK SHALL BE COMPACTED TO 95% RELATIVE DENSITY PER AASHTO T–180.

ACCESSWAY TYPE	PAVEMENT WIDTH MAXIMUM LENGTH 200'	SURFACE TYPE
NEIGHBORHOOD ACCESSWAY	5' – 12'	PCC OR A/C
PUBLIC / PRIVATE INTEGRATED ACCESSWAY	7' – 12'	PCC OR A/C
PARK / NATURAL AREA ACCESSWAY	8' – 12'	PCC, A/C, OR SOFT SURFACE

*NOTE: WHERE ACCESSWAYS CONTINUE ACROSS STREETS, ADA RAMPS SHALL BE REQUIRED

DRAWN	MRM		COMMUNITY DEVELOPMENT	SCALE	N.T.S.
DIV.	TRANSPORTATION		CITY OF SCAPPOOSE	DATE	2002
REV.	DATE	APPR.	34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON	APPR.	
			PEDESTRIAN / BICYCLE ACCESSWAY DETAIL	DWG. NO.	515



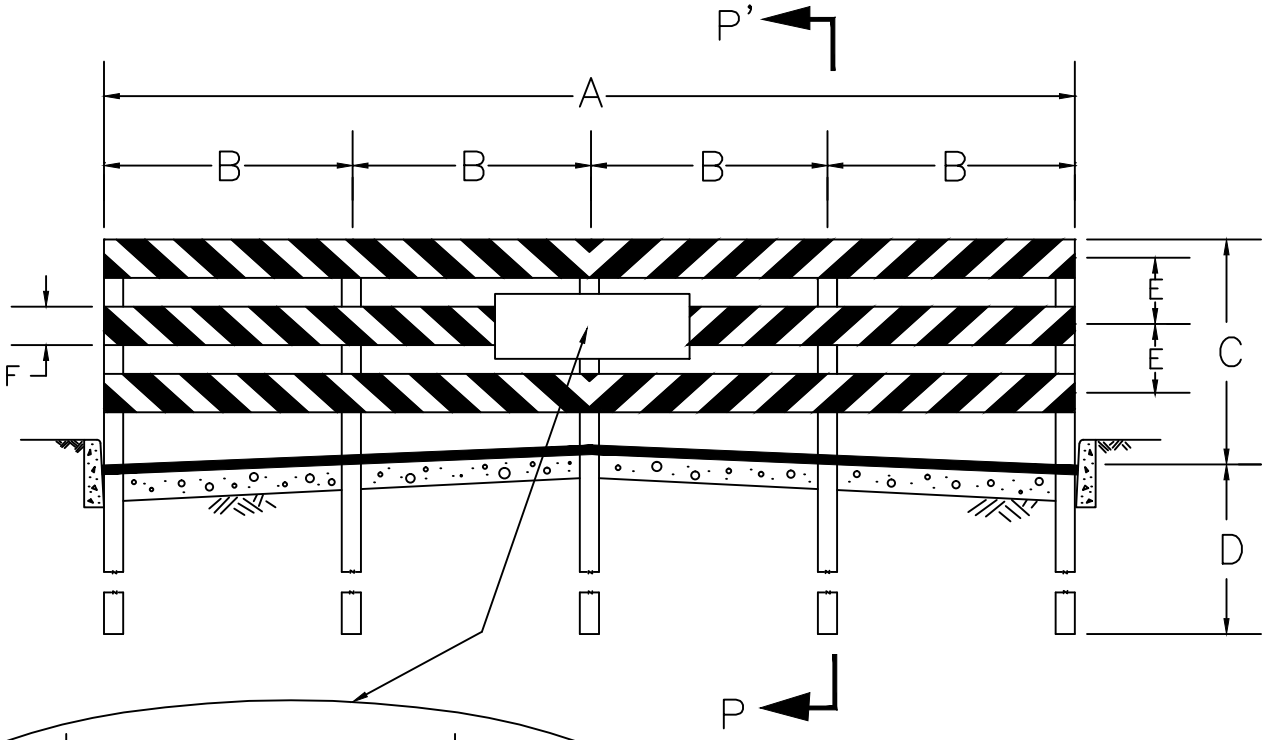
NOTE: DECORATIVE STANDARD BOLLARD MAY BE APPROVED BY THE MANAGER.
SEE STANDARD DETAIL DRAWING 515 FOR ACCESSWAY DETAIL

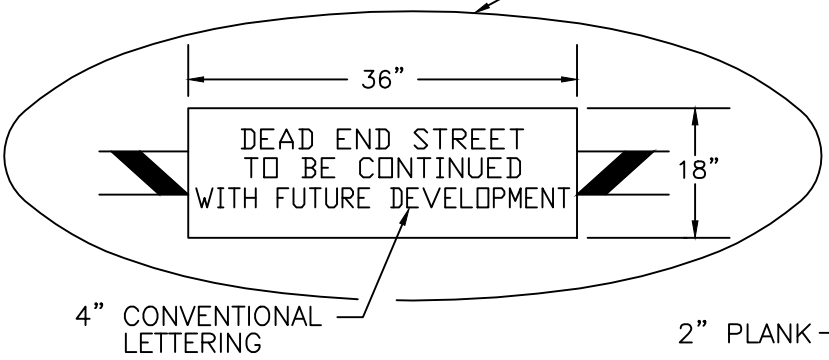
DRAWN MRM		
DIV. TRANSPORTATION		
REV.	DATE	APPR.

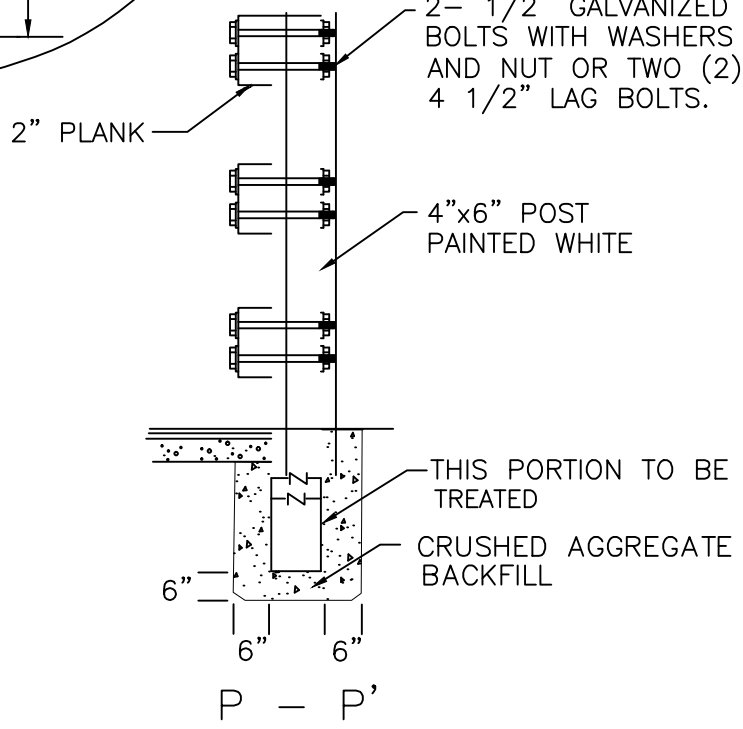
COMMUNITY DEVELOPMENT
CITY OF SCAPPOOSE
34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON

BOLLARD DETAIL

SCALE	N.T.S.
DATE	2002
APPR.	
DWG. NO.	516







A	B	C	D	E	F
40'	10'	5'MIN.	4'MIN.	20"	8"-12"
36'	9'	5'MIN.	4'MIN.	20"	8"-12"
32'	8'	5'MIN.	4'MIN.	20"	8"-12"

NOTES:

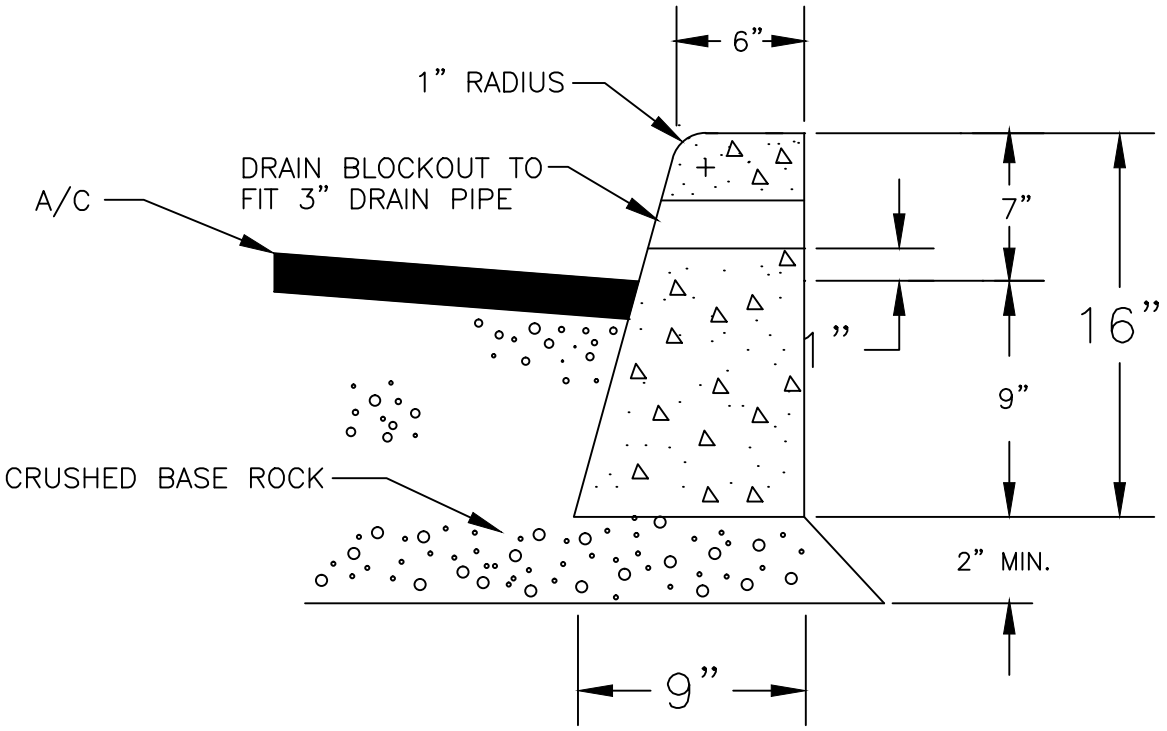
1. STRIPING SHALL BE ALTERNATING RED (RODDA #1249 OR EQUAL) AND WHITE STRIPES 6" IN WIDTH AT A 45 DEGREE ANGLE AND SHALL BE EITHER RETRO-REFLECTIVE TAPE OR PAINTED WITH A SEALED RETRO-REFLECTIVE SURFACE.
2. THIS BARRICADE SHALL CONFORM TO SECTION 3F-1, UNIFORM MANUAL ON TRAFFIC CONTROL DEVICES-FHWA.

DRAWN	M.R.M.	
DIV.	TRANSPORTATION	
REV.	DATE	APPR.

COMMUNITY DEVELOPMENT
CITY OF SCAPPOOSE
34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON

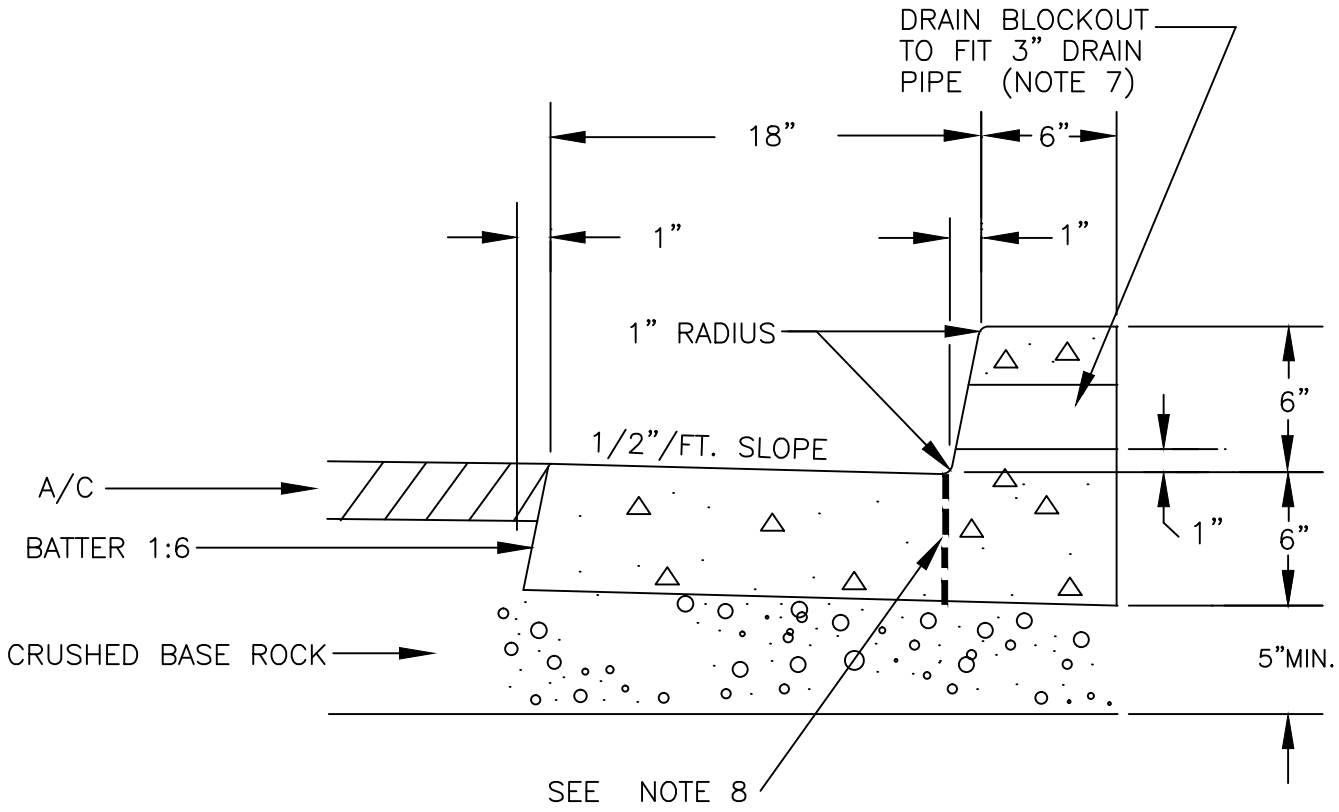
STREET BARRICADE

SCALE	N.T.S.
DATE	2002
APPR.	
DWG. NO.	517



1. PCC SHALL BE 3000 PSI STRENGTH AT 28 DAYS.
2. CONTRACTION JOINTS SHALL BE PLACED AT 15' MAX. SPACING.
3. EXPANSION JOINTS SHALL BE PLACED AT 45' MAX. SPACING AND AT ALL DRIVEWAYS AND CURB RETURNS.
4. CURB EXPOSURE SHALL BE 9" AT ALL CATCH INLETS.
5. DRAIN BLOCKOUT SHALL BE ABLE TO FIT 3" DIA. DRAIN PIPE AND PLACED WHERE DIRECTED.
6. ADD KEYWAY WHEN CURB IS PLACED AGAINST SIDEWALK.
7. CRUSHED BASE ROCK SHALL BE COMPACTED TO 95% RELATIVE DENSITY PER AASHTO T-180.
8. TYPE "C" CURB SHALL ONLY BE INSTALLED AT LOCATIONS (REPLACEMENT) TO MATCH EXISTING CURB TYPE.

DRAWN M.R.M.			COMMUNITY DEVELOPMENT	SCALE N.T.S.
DIV. TRANSPORTATION			CITY OF SCAPPOOSE	DATE 2002
REV.	DATE	APPR.	34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON	APPR.
			TYPE "C" CURB	DWG. NO. 518

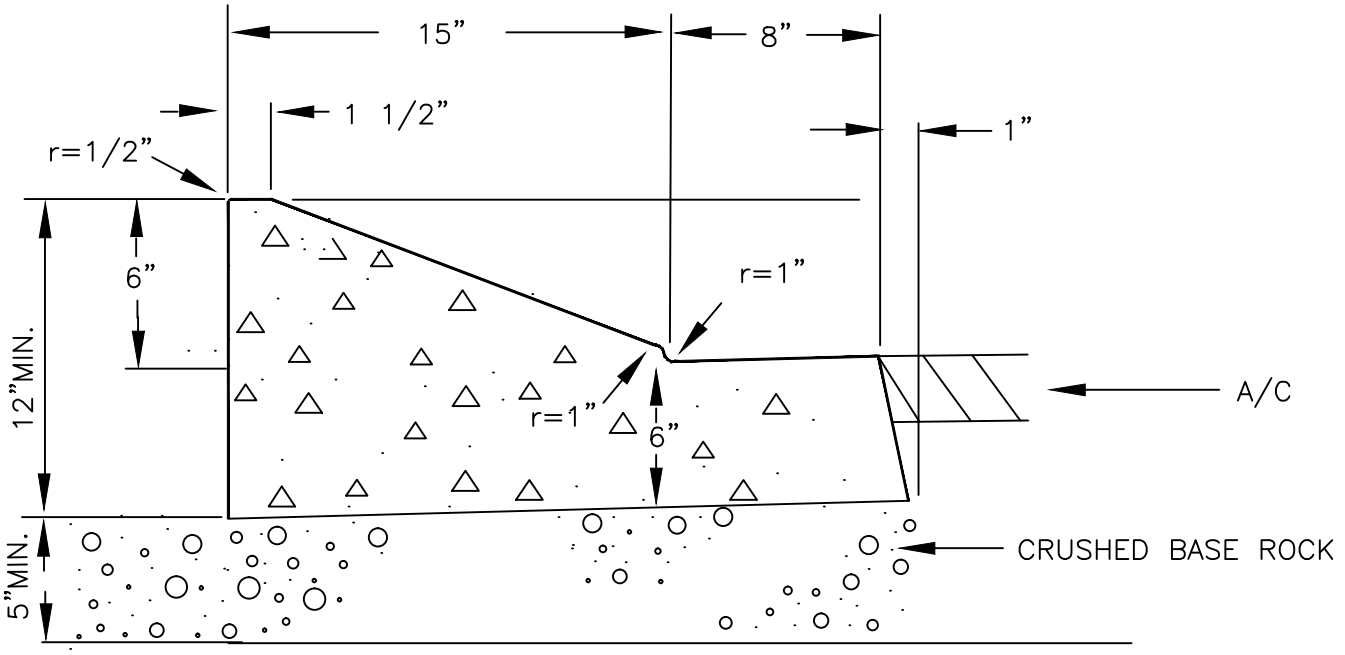


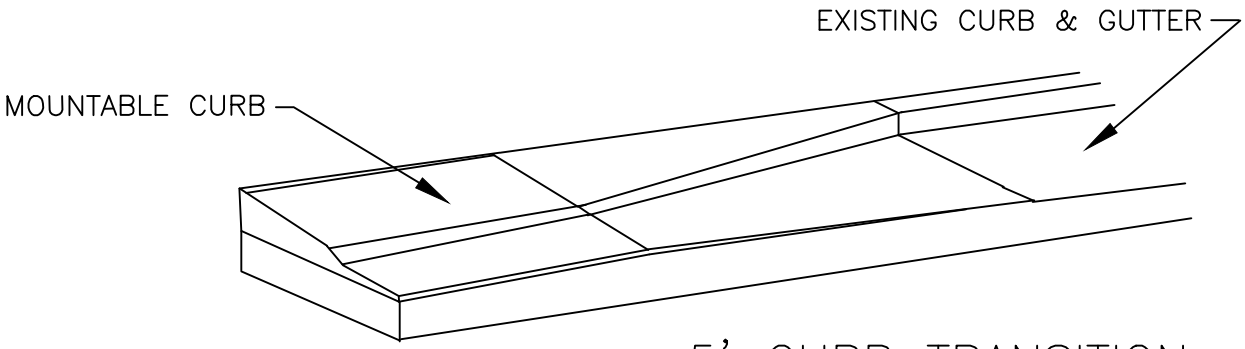
1. PCC SHALL BE 3000 PSI STRENGTH AT 28 DAYS.
2. CONTRACTION JOINTS SHALL BE PLACED AT 15' MAX. SPACING.
3. EXPANSION JOINTS SHALL BE PLACED AT ALL DRIVEWAYS AND CURB RETURNS.
4. CURB EXPOSURE SHALL BE 8" AT ALL CATCH INLETS.
5. DRAIN BLOCKOUT SHALL BE SUFFICIENT FOR 3" DRAIN PIPE AND PLACED WHERE DIRECTED.
6. ADD KEYWAY WHEN CURB IS PLACED AGAINST SIDEWALK.
7. CRUSHED BASE ROCK SHALL BE COMPACTED TO 95% RELATIVE DENSITY PER AASHTO T–180.
8. WHEN A DRIVEWAY IS PLACED WHERE THERE IS AN EXISTING MONOLITHIC CURB MAKE A VERTICAL SAWCUT AT THE FACE OF CURB. REPLACE BACK PART OF CURB AND ADD DRIVEWAY WITH ONE CONTIGUOUS POUR.

DRAWN	M.R.M.		COMMUNITY DEVELOPMENT	SCALE	N.T.S.
DIV.	TRANSPORTATION		CITY OF SCAPPOOSE	DATE	2002
REV.	DATE	APPR.	34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON	APPR.	
			MONOLITHIC CURB AND GUTTER	DWG. NO.	519

MOUNTABLE CURB

TO BE USED FOR HIGH DENSITY DEVELOPMENT
WITH CITY ENGINEER'S APPROVAL





5' CURB TRANSITION

1. PCC SHALL BE 3000 PSI STRENGTH AT 28 DAYS.
2. CONTRACTION JOINTS SHALL BE PLACED AT 15' MAX. SPACING.
3. EXPANSION JOINTS SHALL BE PLACED AT 45' MAX. SPACING AND AT ALL DRIVEWAYS AND CURB RETURNS.
4. ADD KEYWAY WHEN SIDEWALK IS PLACED AGAINST CURB.
5. CRUSHED BASE ROCK SHALL BE COMPACTED TO 95% RELATIVE DENSITY PER AASHTO T-180.
6. ROOF DRAINS SHALL DRAIN DIRECTLY TO DRAINAGE CATCH BASINS.
7. ALTERNATE DESIGNS MAY BE APPROVED BY THE CITY ENGINEER.

DRAWN MRM		
DIV. TRANSPORTATION		
REV.	DATE	APPR.

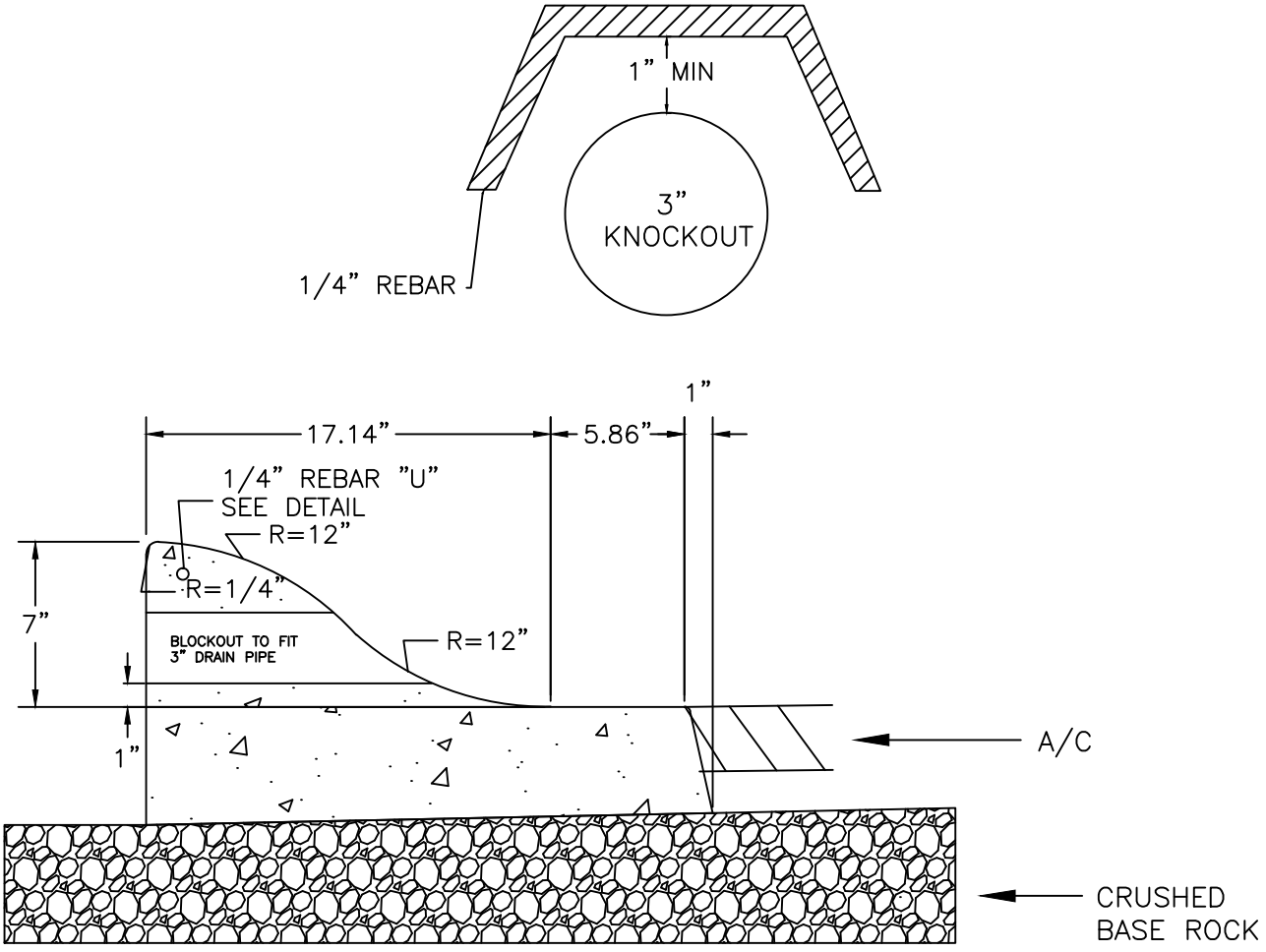
COMMUNITY DEVELOPMENT
CITY OF SCAPPOOSE
34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON

MOUNTABLE CURB

SCALE	N.T.S.
DATE	2002
APPR.	
DWG. NO.	520

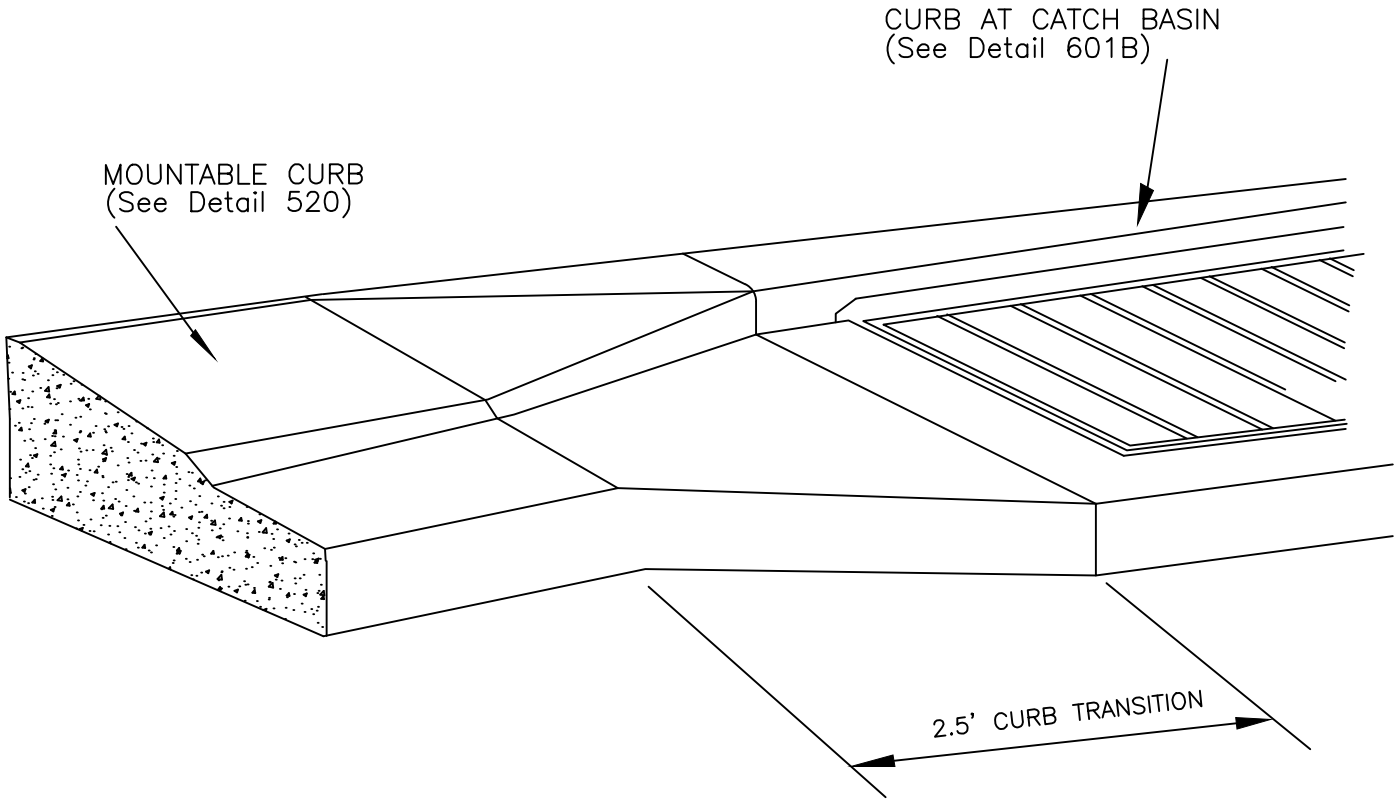
ALTERNATE MOUNTABLE CURB

TO BE USED FOR HIGH DENSITY DEVELOPMENT
WITH CITY ENGINEER'S APPROVAL



1. PCC SHALL BE 3000 PSI STRENGTH AT 28 DAYS.
2. CONTRACTION JOINTS SHALL BE PLACED AT 15' MAX. SPACING.
3. EXPANSION JOINTS SHALL BE PLACED AT 45' MAX. SPACING AND AT ALL DRIVEWAYS AND CURB RETURNS.
4. ADD KEYWAY WHEN SIDEWALK IS PLACED AGAINST CURB.
5. CRUSHED BASE ROCK SHALL BE COMPACTED TO 95% RELATIVE DENSITY PER AASHTO T-180.
6. ROOF DRAINS SHALL DRAIN DIRECTLY TO DRAINAGE CATCH BASINS.
7. ALTERNATE DESIGNS MAY BE APPROVED BY THE CITY ENGINEER.

DRAWN ELS			COMMUNITY DEVELOPMENT CITY OF SCAPPOOSE 34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON	SCALE N.T.S.
DIV.				DATE 3-12-2002
REV.	DATE	APPR.		APPR. ELS
			MOUNTABLE CURB	DWG. NO. 520A



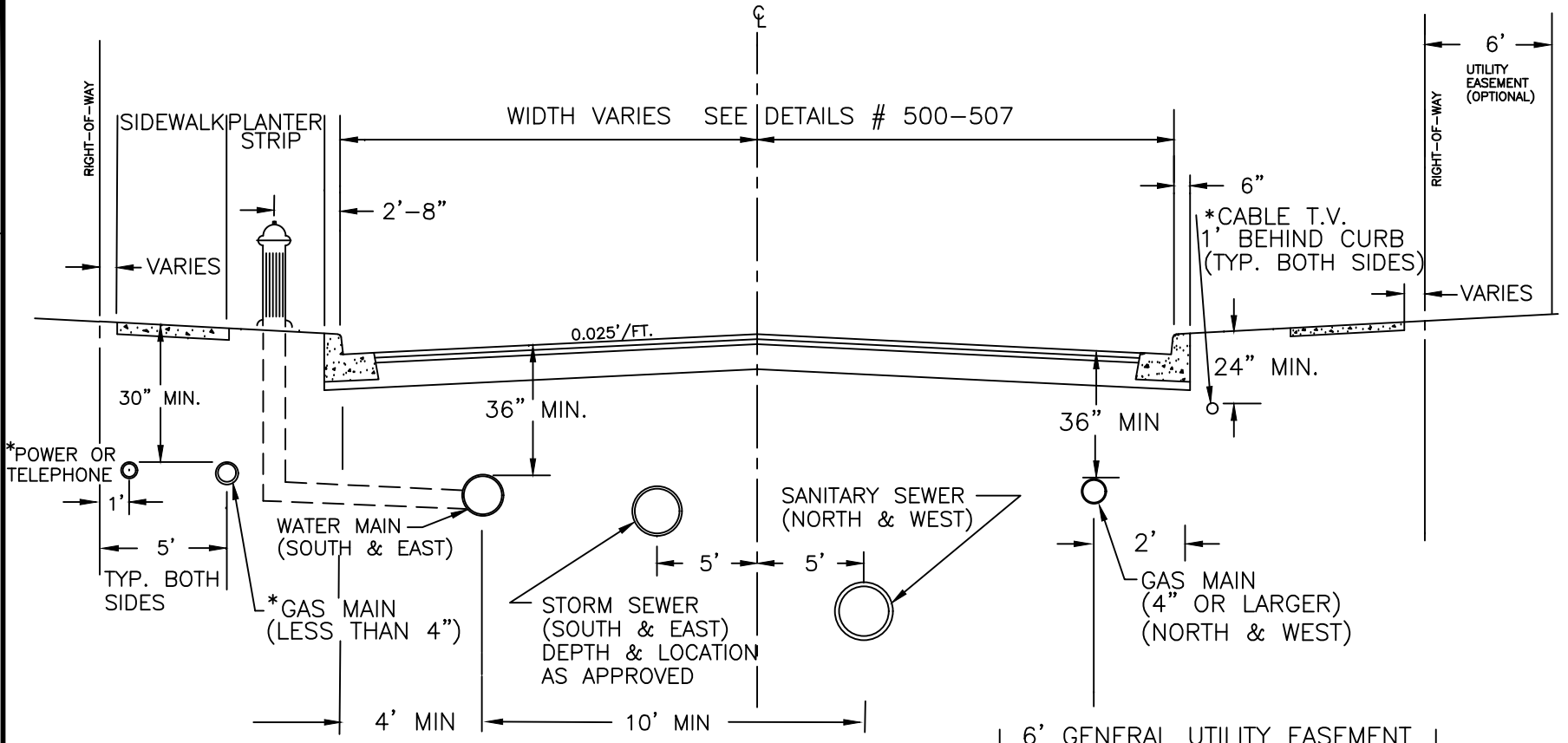
1. MAINTAIN TOP OF CURB AT STANDARD ELEVATION. SET LOWER SIDE OF GRATE 0'–6" BELOW TOP OF CURB.
2. CONSTRUCT CATCH BASIN PER DRAWING 601B

DRAWN M.R.M.		
DIV. TRANSPORTATION		
REV.	DATE	APPR.

COMMUNITY DEVELOPMENT
CITY OF SCAPPOOSE
34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON

MOUNTABLE CURB TRANSITION
SIDE INLET CATCH BASIN

SCALE	N.T.S.
DATE	2002
APPR.	
DWG. NO.	521



*NOTE: IF SIX FOOT UTILITY EASEMENT IS PRESENT ALONG PROPERTY FRONTAGE PLACEMENT SHALL BE AT BACK OF SIDEWALK WITHIN UTILITY EASEMENT.

1. ON STREETS LESS THAN 18' IN WIDTH REFER TO DETAIL #411, FOR WATERLINE SANITARY SEWER LINE SEPARATION.
2. WHERE NO PLANTER STRIP EXISTS, FIRE HYDRANTS ARE TO BE LOCATED IN LINE WITH STREET LIGHTS & STREET TREES, OR AT BACK OF WALK. IF OUTSIDE THE R.O.W., LOCATE IN A 5' X 5' EASEMENT.

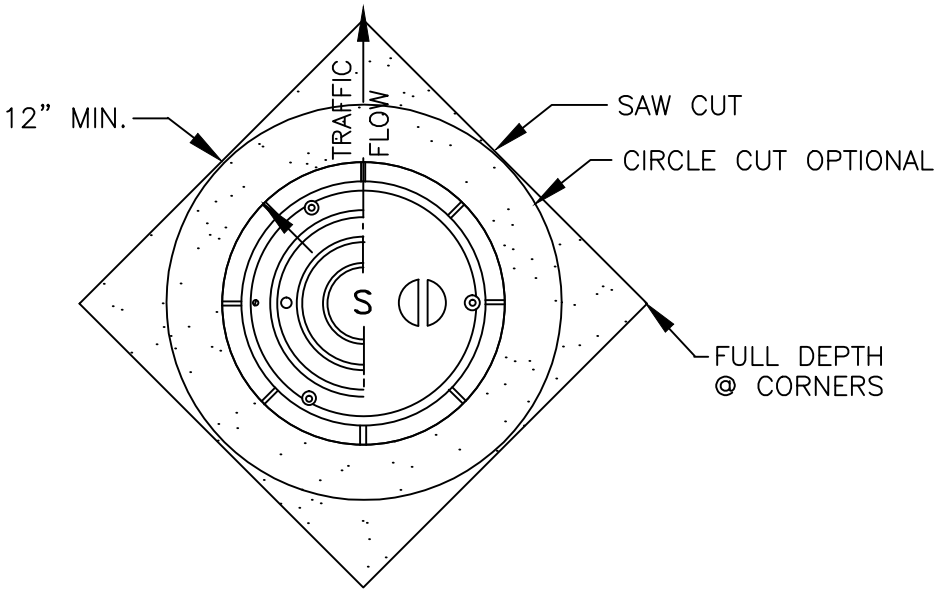
***JOINT TRENCH DETAIL (OPTIONAL)** N.T.S.

DRAWN AJB
DIV. TRANSPORTATION
REV. DATE APPR.

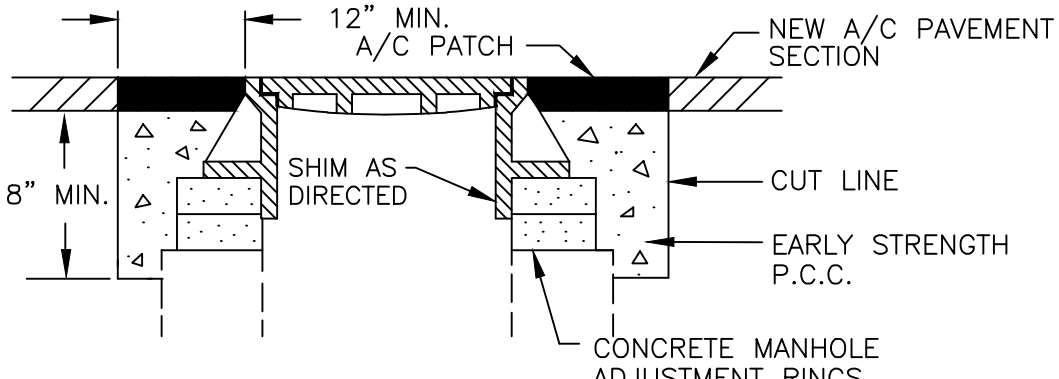
COMMUNITY DEVELOPMENT
CITY OF SCAPPOOSE
34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON

TYPICAL UTILITY PLACEMENT DETAIL

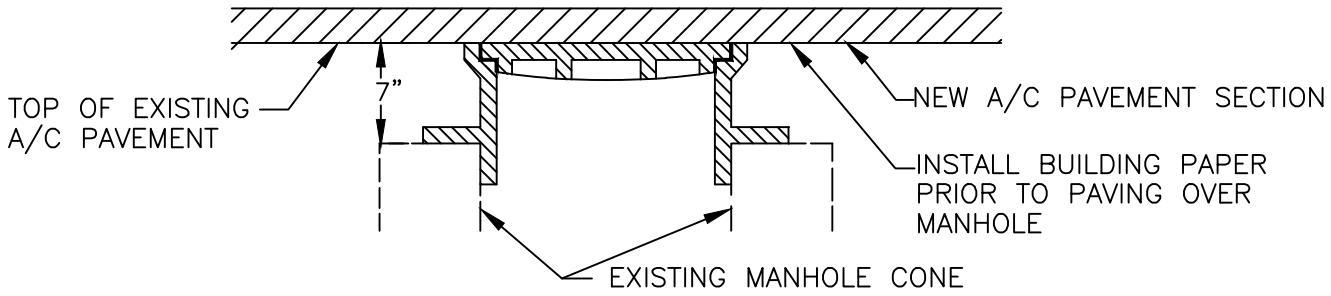
SCALE N.T.S.
DATE 2002
APPR.
DWG. NO. 522



PLAN VIEW



STEPS 2, 3, & 4



STEP 1

STEP 1 COVER EXISTING MANHOLE WITH BUILDING PAPER AND CONSTRUCT A/C PAVEMENT OVER TOP OF MANHOLE.

STEP 2 SAW CUT AND REMOVE PAVEMENT AROUND MANHOLE 12" MIN. FROM MANHOLE FRAME.

STEP 3 RAISE MANHOLE FRAME AND INSTALL CONCRETE RINGS TO FINISH PAVEMENT PROFILE AND CROSS SLOPE.

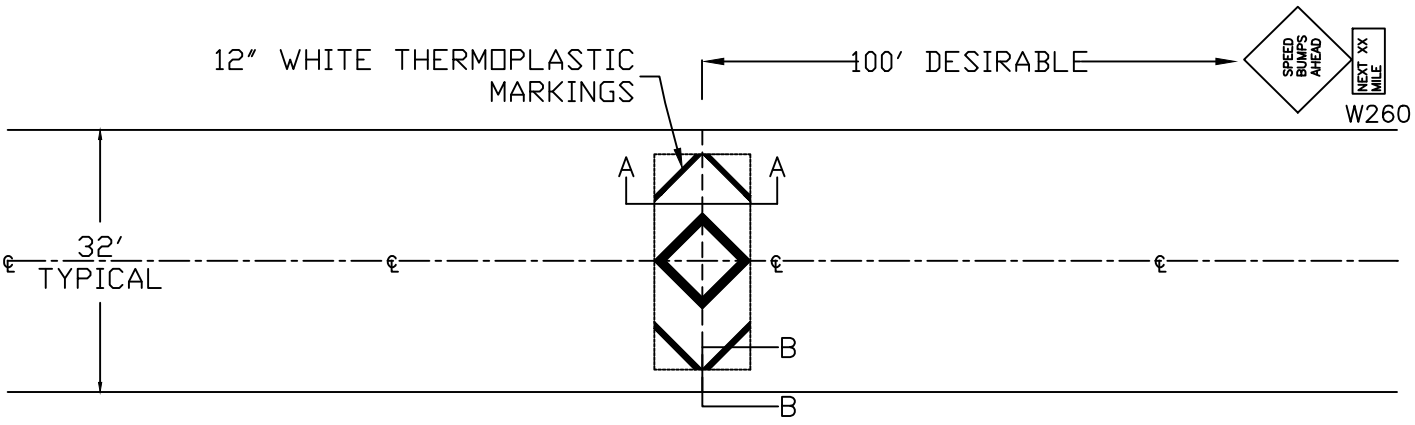
STEP 4 BACKFILL WITH EARLY STRENGTH P.C.C. AND A/C TO DEPTHS AS DIRECTED.

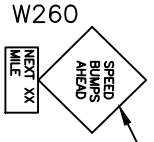
DRAWN	MRM	
DIV.	TRANSPORTATION	
REV.	DATE	APPR.

COMMUNITY DEVELOPMENT
CITY OF SCAPPOOSE
34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON

MANHOLE ADJUSTMENT DETAIL

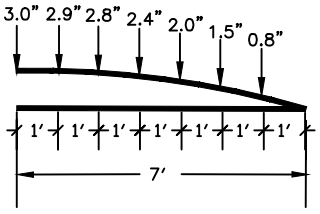
SCALE	N.T.S.
DATE	2002
APPR.	
DWG. NO.	523

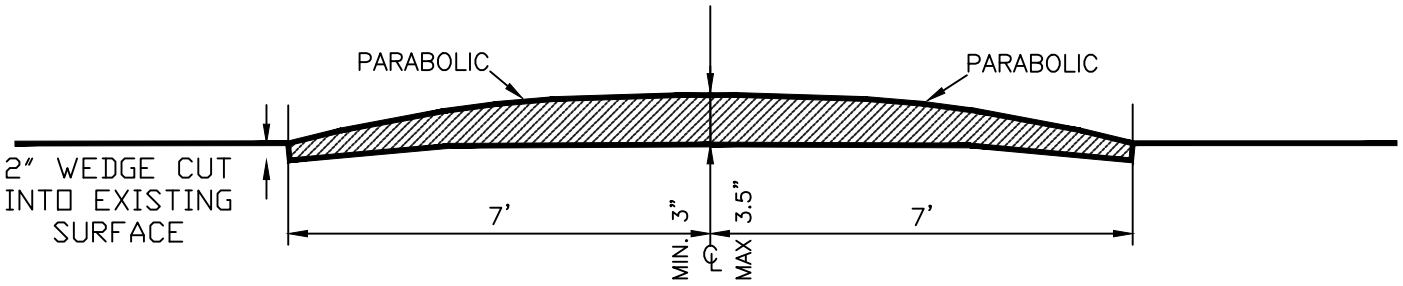




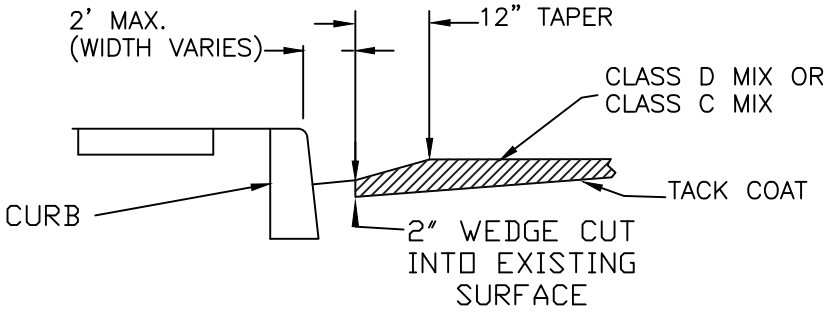
SIGNS TO BE INSTALLED BY OTHERS

SIGNING AND STRIPING PLAN





SECTION A–A



SECTION B–B

NOTES:

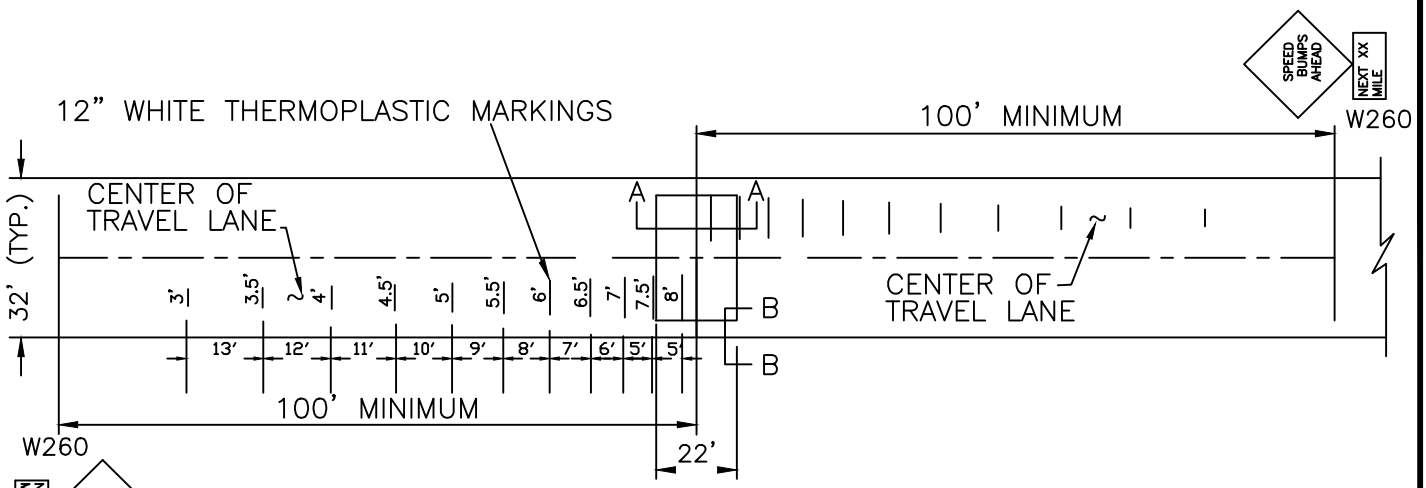
1. SPACING – SPEED HUMPS SHOULD BE PLACED ACCORDING TO THE ENGINEER'S EVALUATION OF THE PHYSICAL STREET SECTION AS WELL AS TRAFFIC OPERATIONS DATA. TYPICALLY, SPEED HUMPS SHOULD BE PLACED BETWEEN 300 AND 600 FEET APART.
2. TOLERANCE – THE TOLERANCE FOR SPEED HUMPS SHOULDN'T VARY BY MORE THAN .5" FROM THE CITY'S TEMPLATE.

DRAWN MRM		
DIV. TRANSPORTATION		
REV.	DATE	APPR.

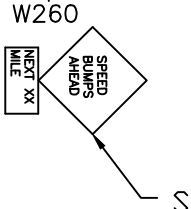
COMMUNITY DEVELOPMENT
CITY OF SCAPPOOSE
34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON

14FT. WIDE MOUNTABLE SPEED BUMP

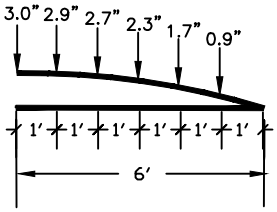
SCALE N.T.S.
DATE 2002
APPR.
DWG. NO. 524



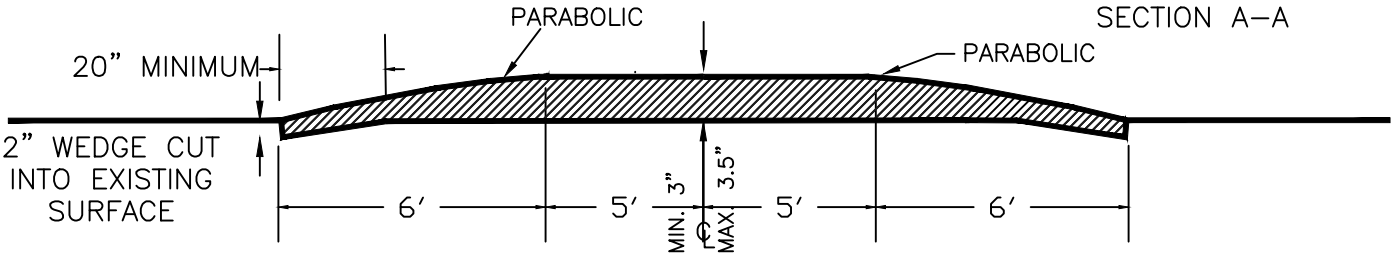
SIGNING AND STRIPING PLAN
NTS

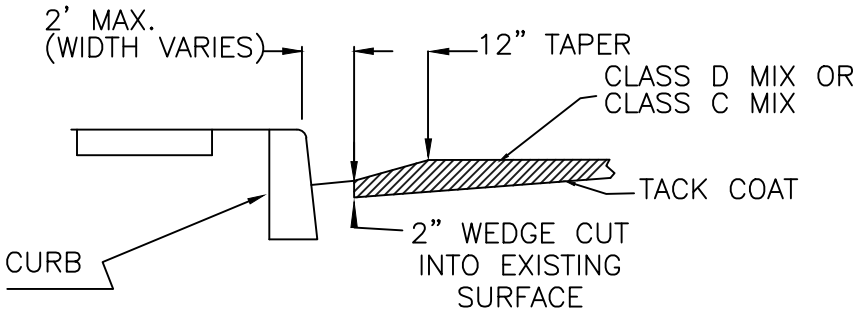


SIGNS TO BE INSTALLED BY OTHERS



SECTION A–A

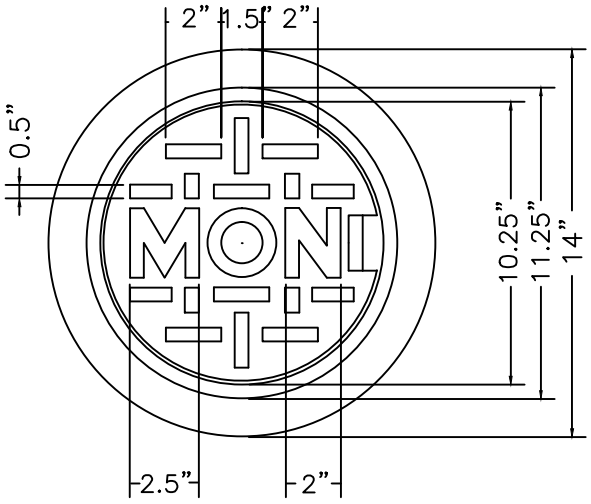




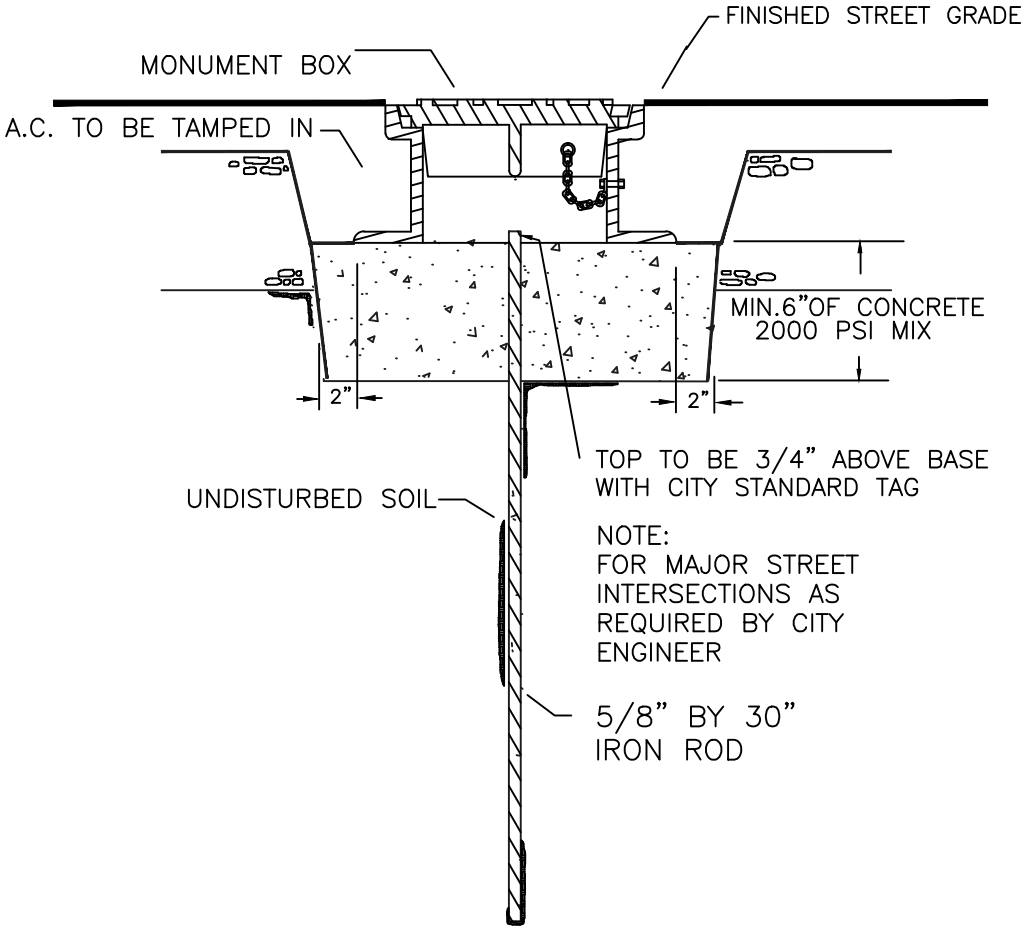
SECTION B–B

NOTES:
1. SPACING – SPEED HUMPS SHOULD BE PLACED ACCORDING TO THE ENGINEER'S EVALUATION OF THE PHYSICAL STREET SECTION AS WELL AS TRAFFIC OPERATIONS DATA. TYPICALLY, SPEED HUMPS SHOULD BE PLACED BETWEEN 300 AND 600 FEET APART.
2. TOLERANCE – THE TOLERANCE FOR SPEED HUMPS SHOULDN'T VARY BY MORE THAN .5" FROM THE CITY'S TEMPLATE.

DRAWN	MRM		COMMUNITY DEVELOPMENT	SCALE	N.T.S.
DIV.	TRANSPORTATION		CITY OF SCAPPOOSE	DATE	2002
REV.	DATE	APPR.	34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON	APPR.	
			22 FT. WIDE SPEED HUMP	DWG. NO.	525



LID



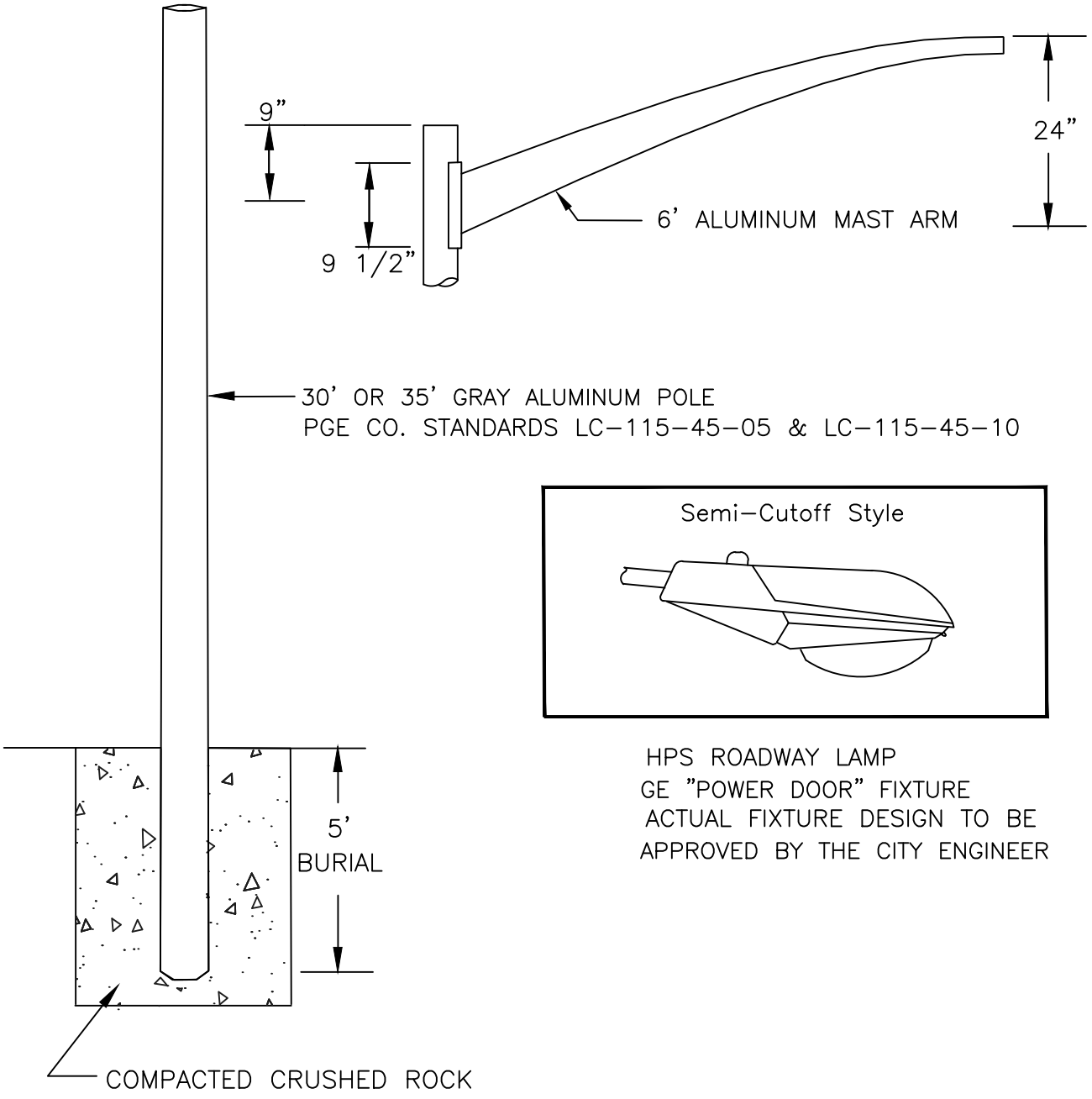
PLACEMENT OF BRASS CAP AND MONUMENT BOX SHALL FOLLOW COLUMBIA COUNTY SURVEYORS OFFICE STANDARDS.

DRAWN	MRM	
DIV.	TRANSPORTATION	
REV.	DATE	APPR.

COMMUNITY DEVELOPMENT
CITY OF SCAPPOOSE
34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON

STANDARD MONUMENT BOX

SCALE	N.T.S.
DATE	2002
APPR.	
DWG. NO.	526



HPS ROADWAY LAMP
GE "POWER DOOR" FIXTURE
ACTUAL FIXTURE DESIGN TO BE
APPROVED BY THE CITY ENGINEER

1. MOUNT LUMINAIRE 25-30 FT. ABOVE GROUND.
2. ON STREETS WITH A PLANTER STRIP BETWEEN THE CURB AND SIDEWALK, MOUNT POLE 2FT. BEHIND FACE OF CURB.

   ON STREETS WITH NO PLANTER STRIP BETWEEN THE CURB AND SIDEWALK, MOUNT POLE 6" BEHIND SIDEWALK.

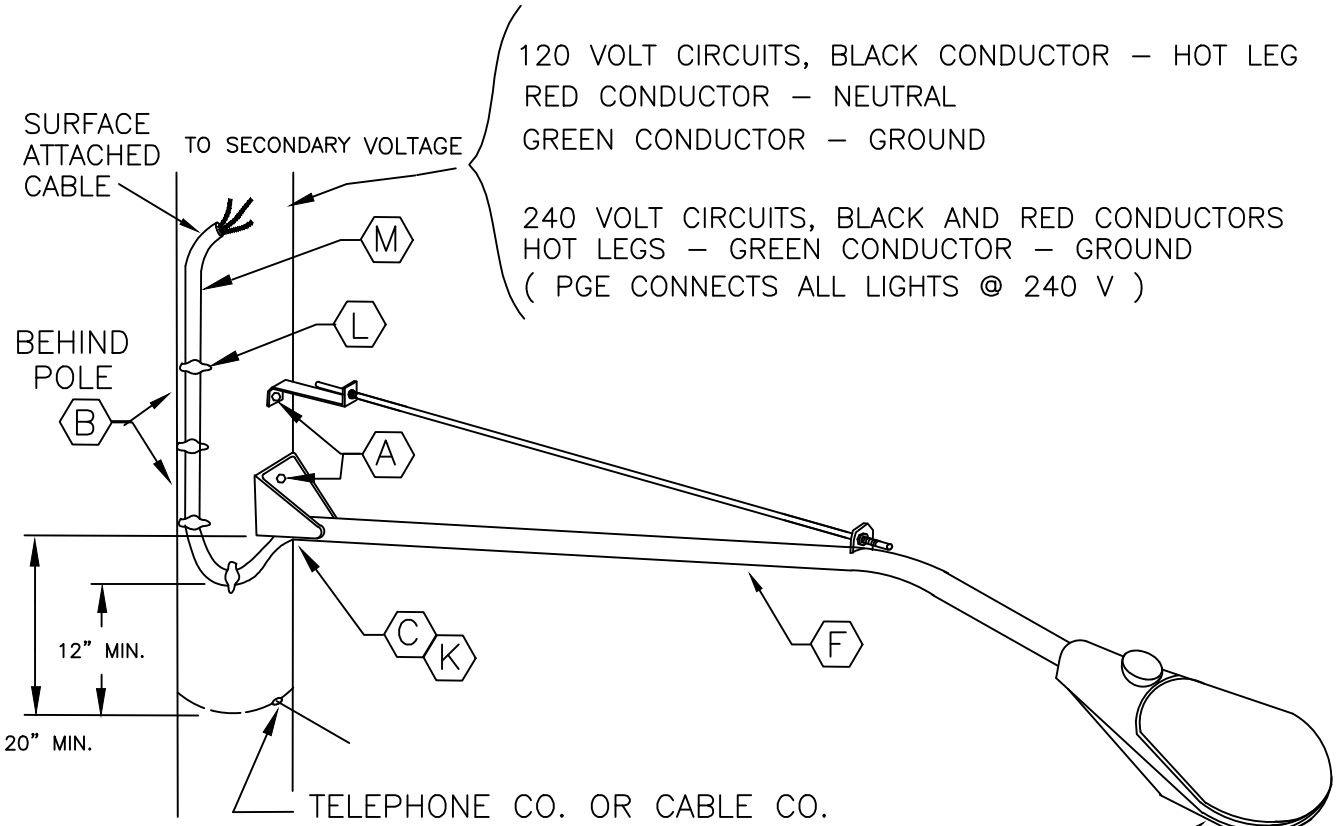
DRAWN	MRM	
DIV.	TRANSPORTATION	
REV.	DATE	APPR.

COMMUNITY DEVELOPMENT
CITY OF SCAPPOOSE
34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON

STANDARD STREET LIGHT DETAIL

SCALE	N.T.S.
DATE	2002
APPR.	
DWG. NO.	527

LUMINAIRE MOUNTED ON EXISTING POLE



POLE: EXISTING WOOD POLE

WATTAGE REQUIREMENTS WILL VARY DEPENDING ON LIGHTING REQUIREMENTS.

ITEM	DESCRIPTION
A	Bolt,Mach.,Galv.,5/8"x12"
B	Washer, Flat 3/16"x2–1/4"
C	Screw, Lag, 1/2"x 4–1/2"
F	Arm, Mast, Upswept – 8'*
K	Bushing, Insulation 1–1/4"
L	Staples – Flat Head Type
M	Wire,#10 TC 3 Conductor

MAST ARM INSTALLATION DRAWING

NEW CONSTRUCTION WHERE VOLTAGE IS LIMITED TO 300 VOLTS.

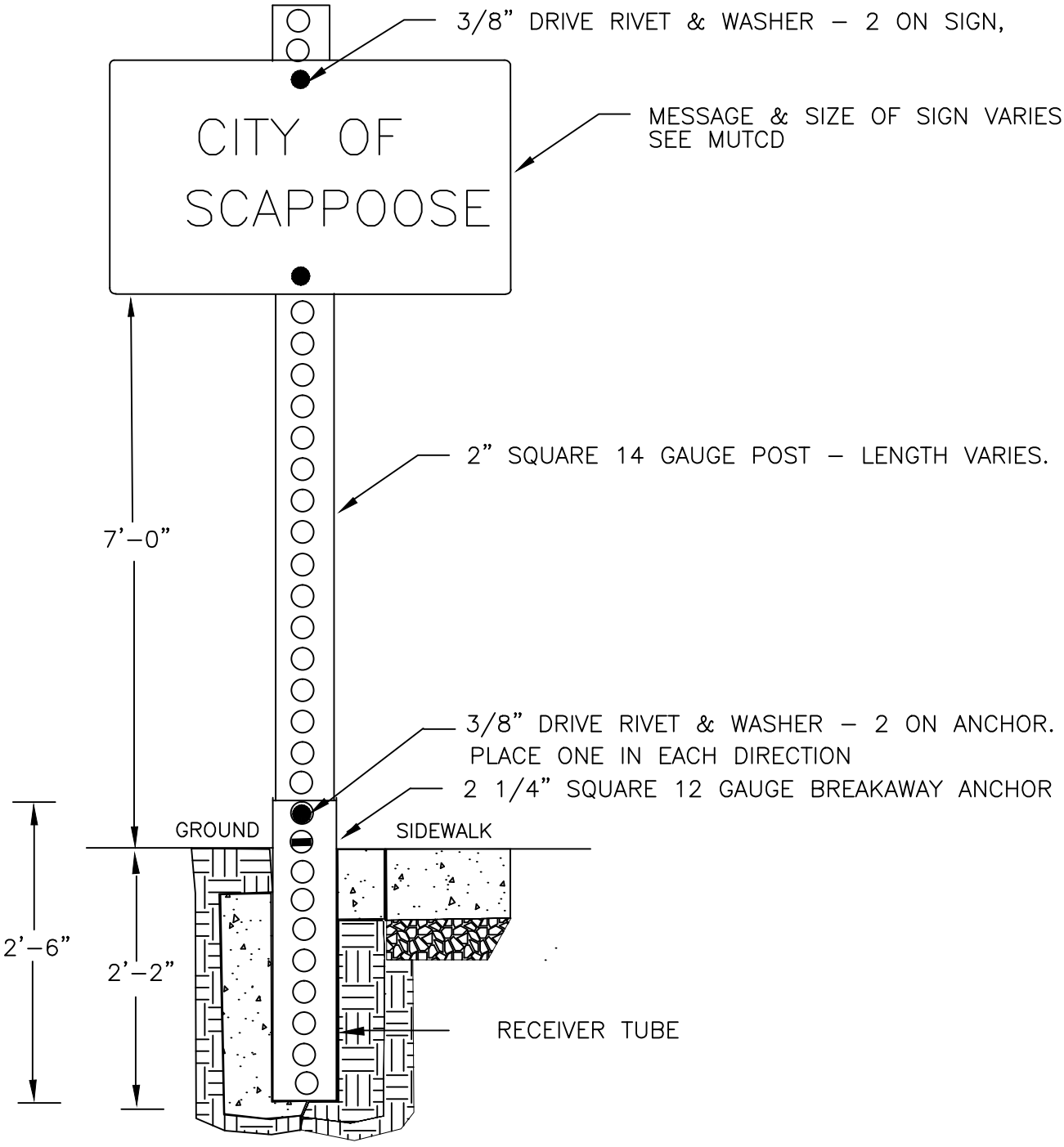
*ACTUAL MAST ARM LENGTH DEPENDS ON LOCATION

DRAWN	MRM	
ENGR.	TRANSPORTATION	
REV.	DATE	APPR.

COMMUNITY DEVELOPMENT
CITY OF SCAPPOOSE
34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON

MAST ARM DETAIL

SCALE	N.T.S.
DATE	2002
APPR.	
DWG. NO.	529



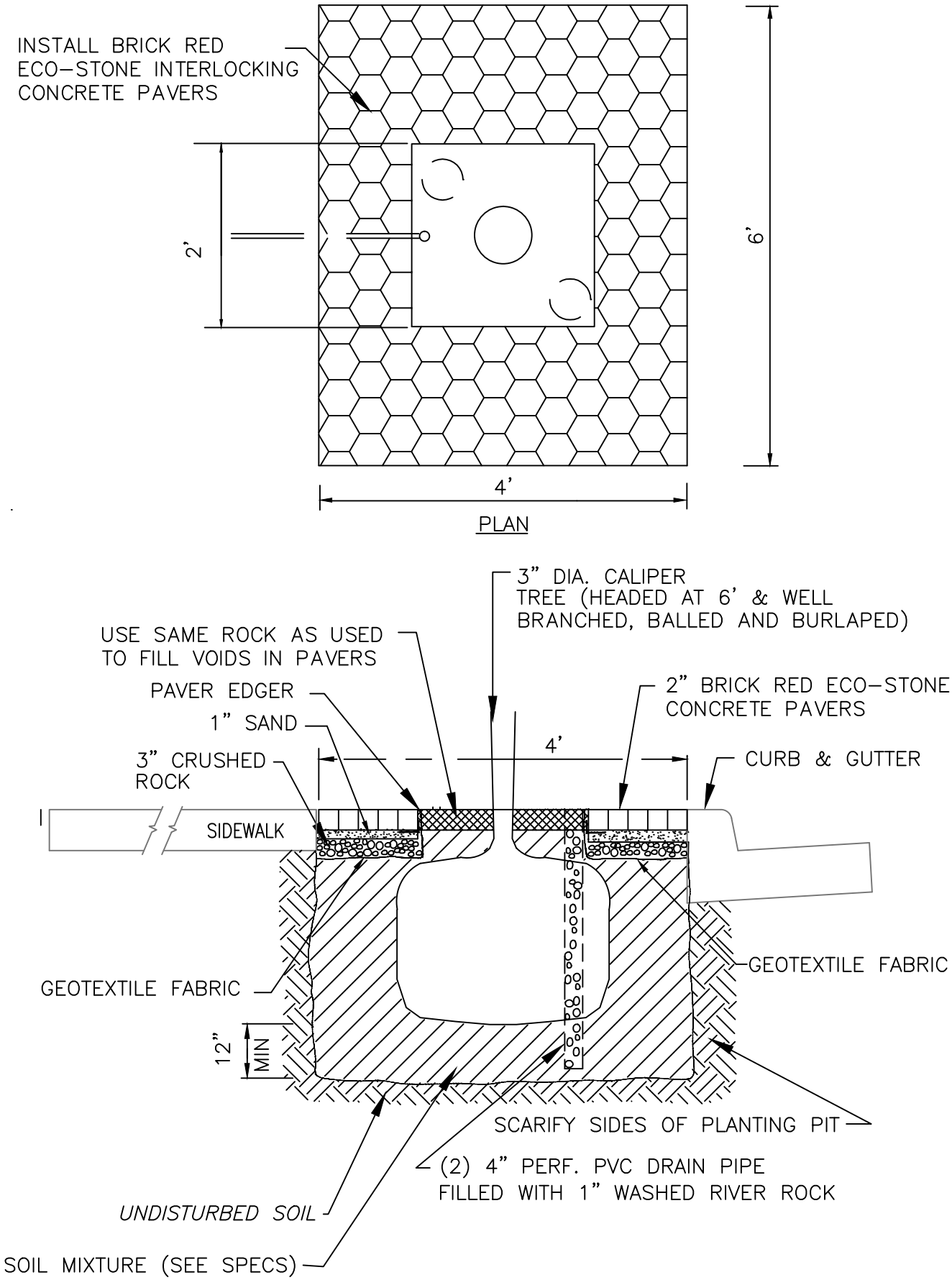
1. ANCHOR SHALL BE COVERED BY DUCT TAPE ON ALL SIDES AND END.
2. ANCHOR SHALL BE SET IN 22" OF CONCRETE UNLESS IN SIDEWALK.
3. IF RECEIVER TUBE IS SET IN SIDEWALK IT SHALL BE 2'–2" DEEP & BACKFILLED WITH COMPACTED FILL, THEN CONCRETE FROM BOTTOM TO TOP OF WALK.
4. SIGN PLACEMENT IN SIDEWALK SHALL ALLOW FOR 5' CLEAR PASSAGE & SIGN POST SHALL BE 12" FROM BACK OF CURB.
5. POST SHALL BE SPRAYED WITH ANTI–SEIZE ON THE LAST 2'–6".

DRAWN	MRM	
DIV.	TRANSPORTATION	
REV.	DATE	APPR.

COMMUNITY DEVELOPMENT
CITY OF SCAPPOOSE
34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON

STANDARD SIGNPOST

SCALE	N.T.S.
DATE	2002
APPR.	
DWG. NO.	531

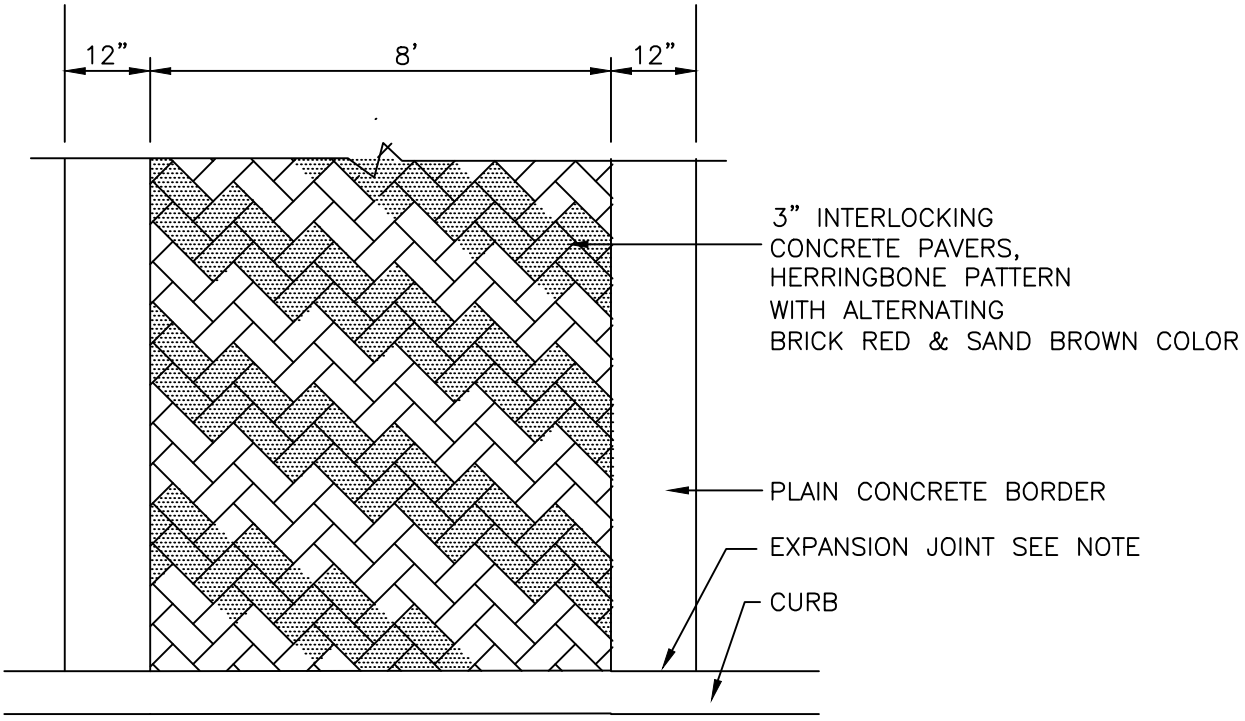


DRAWN AJB		
DIV. TRANSPORTATION		
REV.	DATE	APPR.

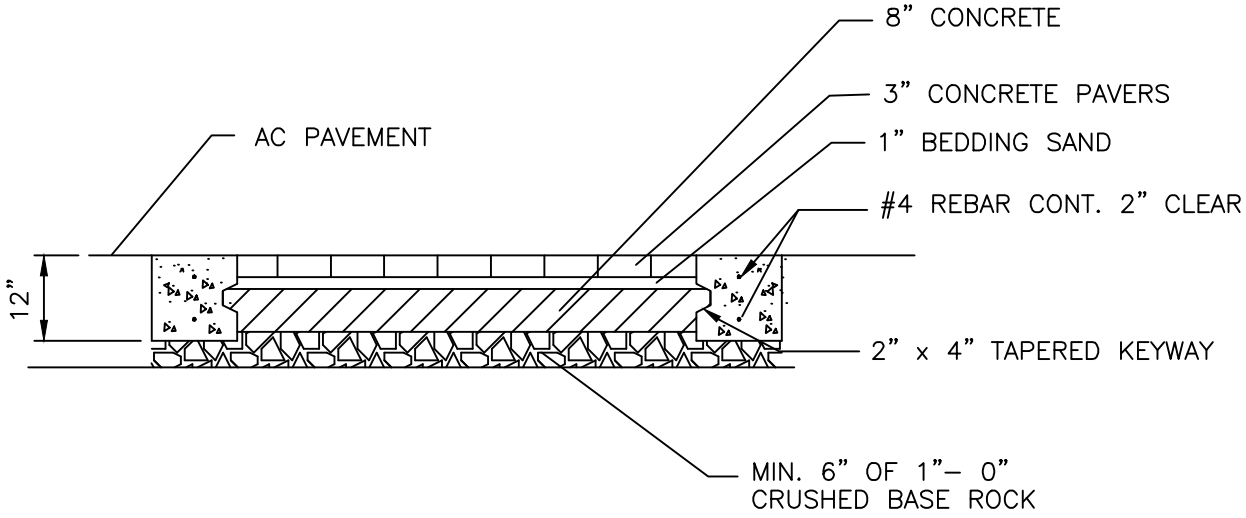
COMMUNITY DEVELOPMENT
CITY OF SCAPPOOSE
34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON

TREE WELL DETAIL

SCALE	N.T.S.
DATE	2002
APPR.	
DWG. NO.	533



PLAN VIEW

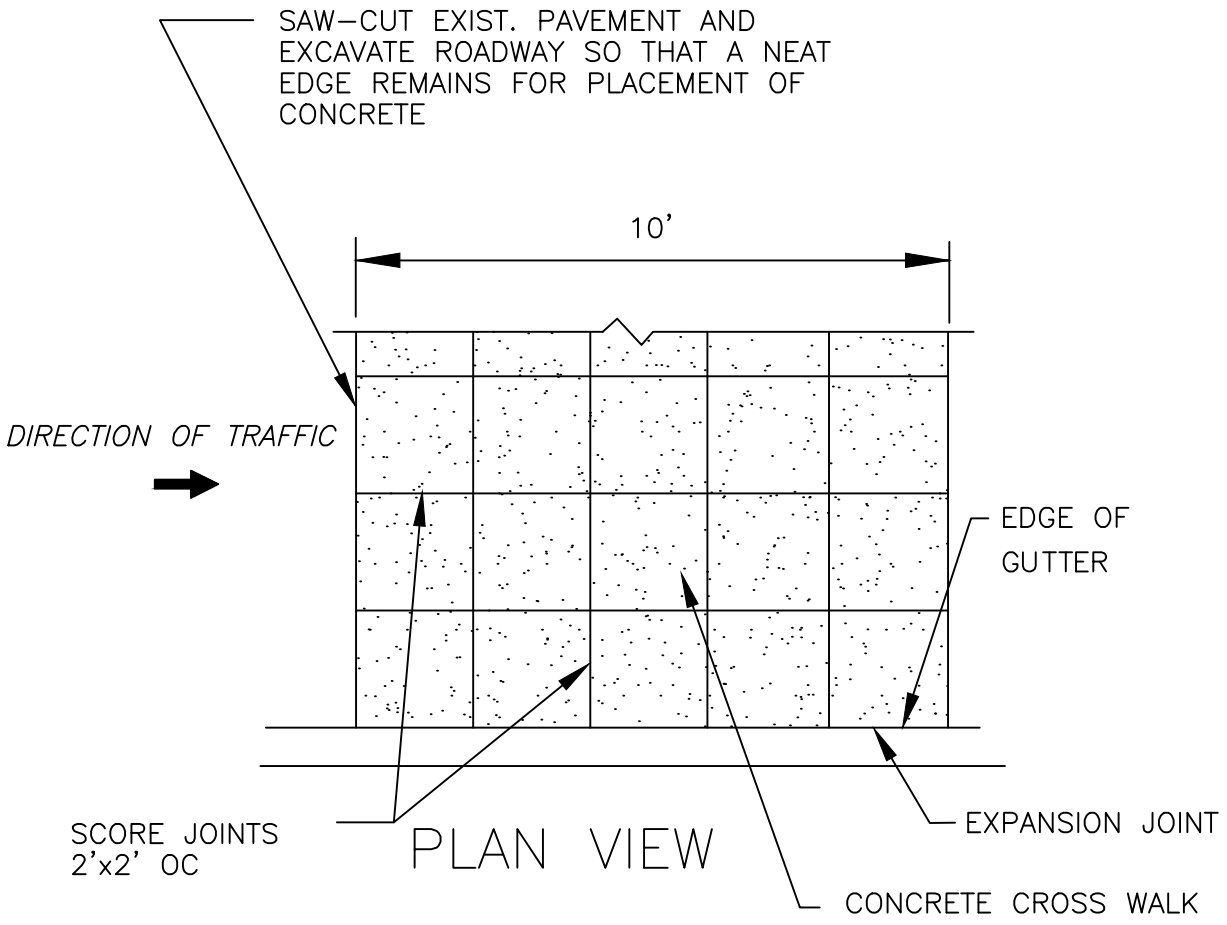


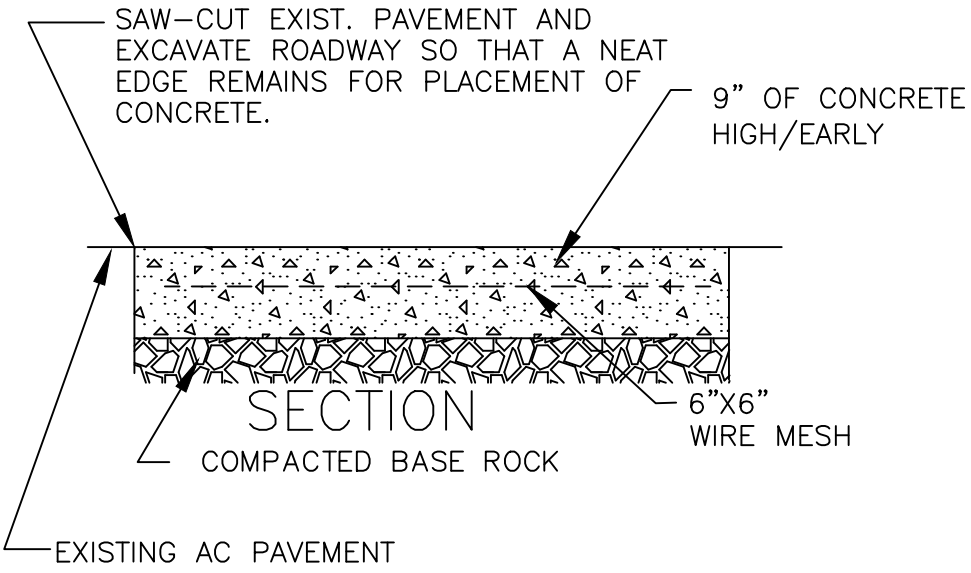
NOTE:

ALL CONC. TO BE 3,000 PSI AT 28 DAYS. PROVIDE 1/2" EXPANSION JOINT AT CENTER OF CROSSWALK OR AT 15' O.C.

SECTION

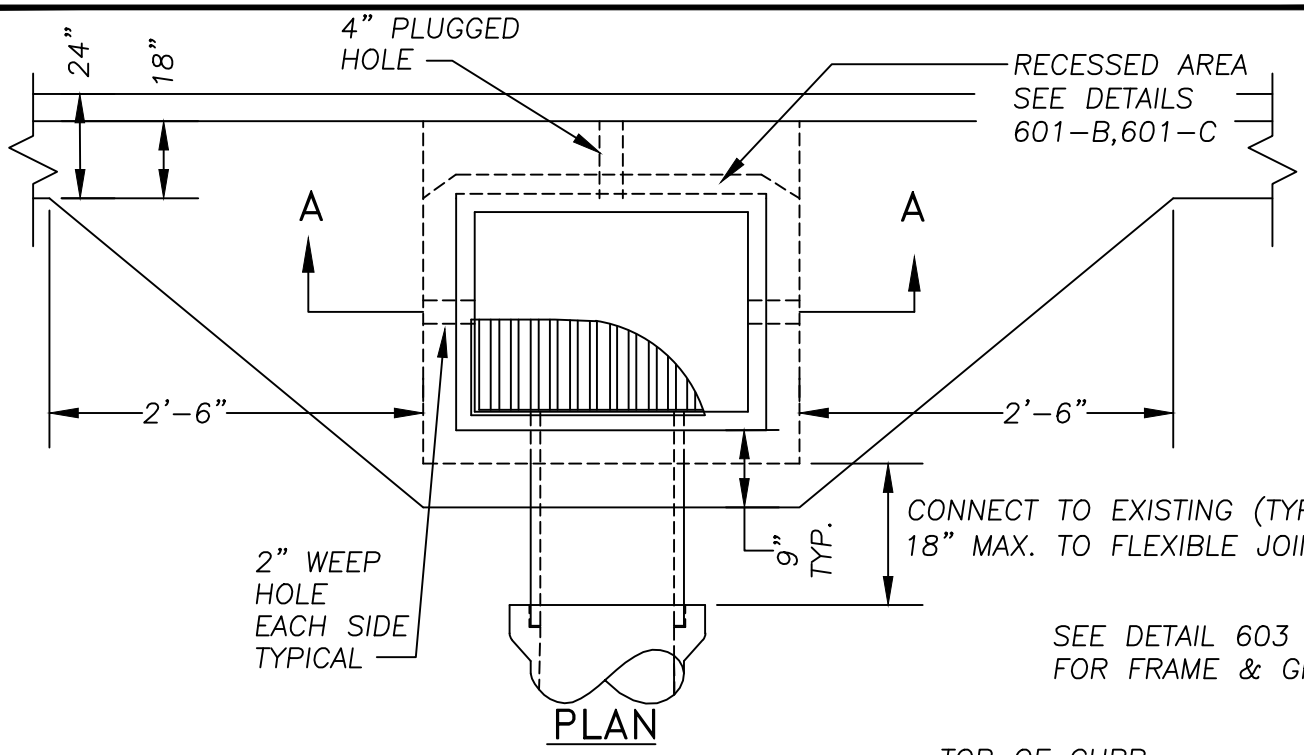
DRAWN AJB			COMMUNITY DEVELOPMENT	SCALE N.T.S.
DIV. TRANSPORTATION			CITY OF SCAPPOOSE	DATE 2002
REV.	DATE	APPR.	34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON	APPR.
			PAVER CROSSWALK DETAIL	DWG. NO. 534



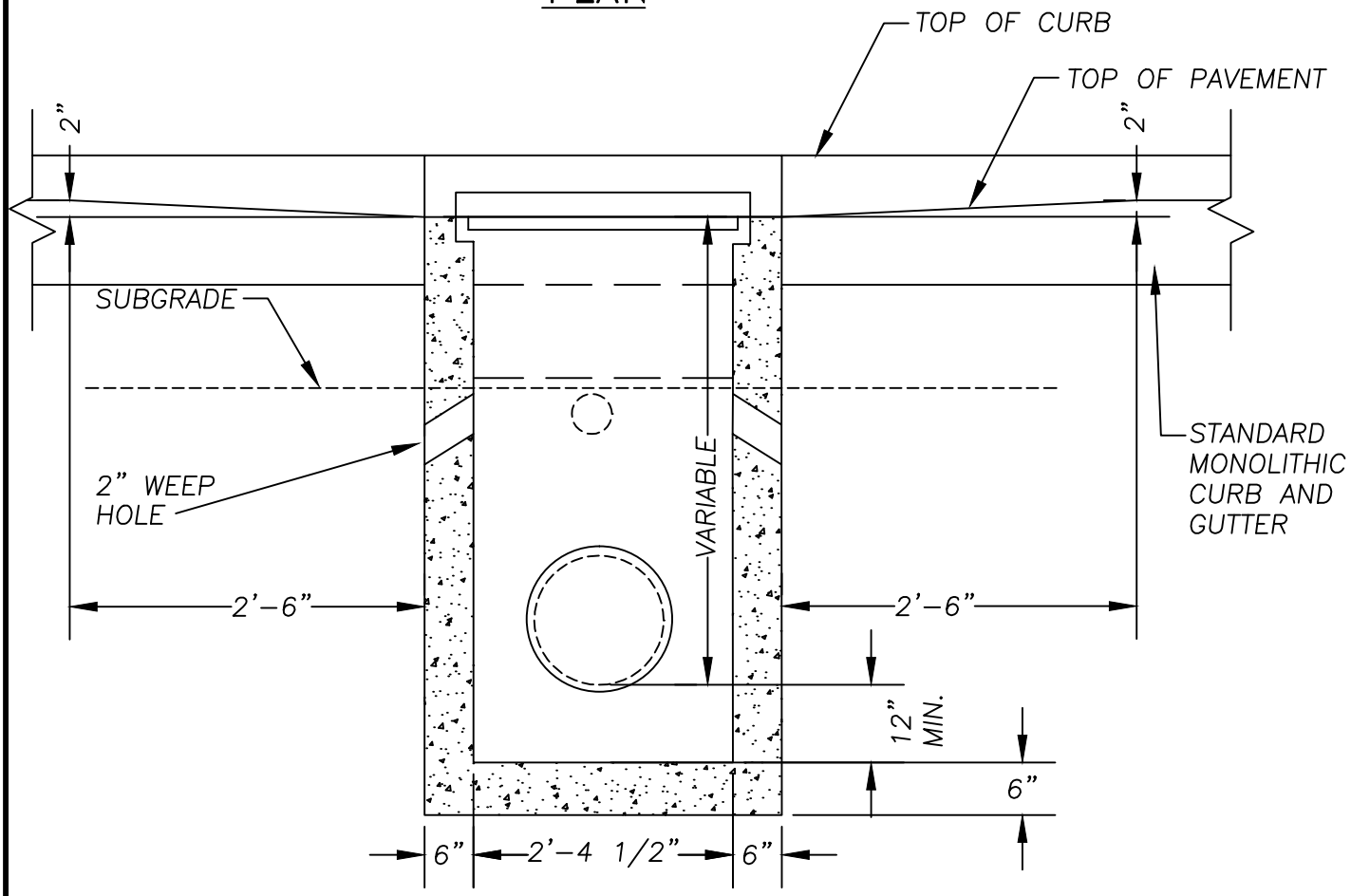


NOTE:
PLACE 1/2" EXPANSION JOINT AT CENTER

DRAWN AJB			COMMUNITY DEVELOPMENT CITY OF SCAPPOOSE 34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON	SCALE N.T.S.
DIV. TRANSPORTATION				DATE 2002
REV.	DATE	APPR.		APPR.
			CONCRETE CROSSWALK DETAIL	DWG. NO. 535

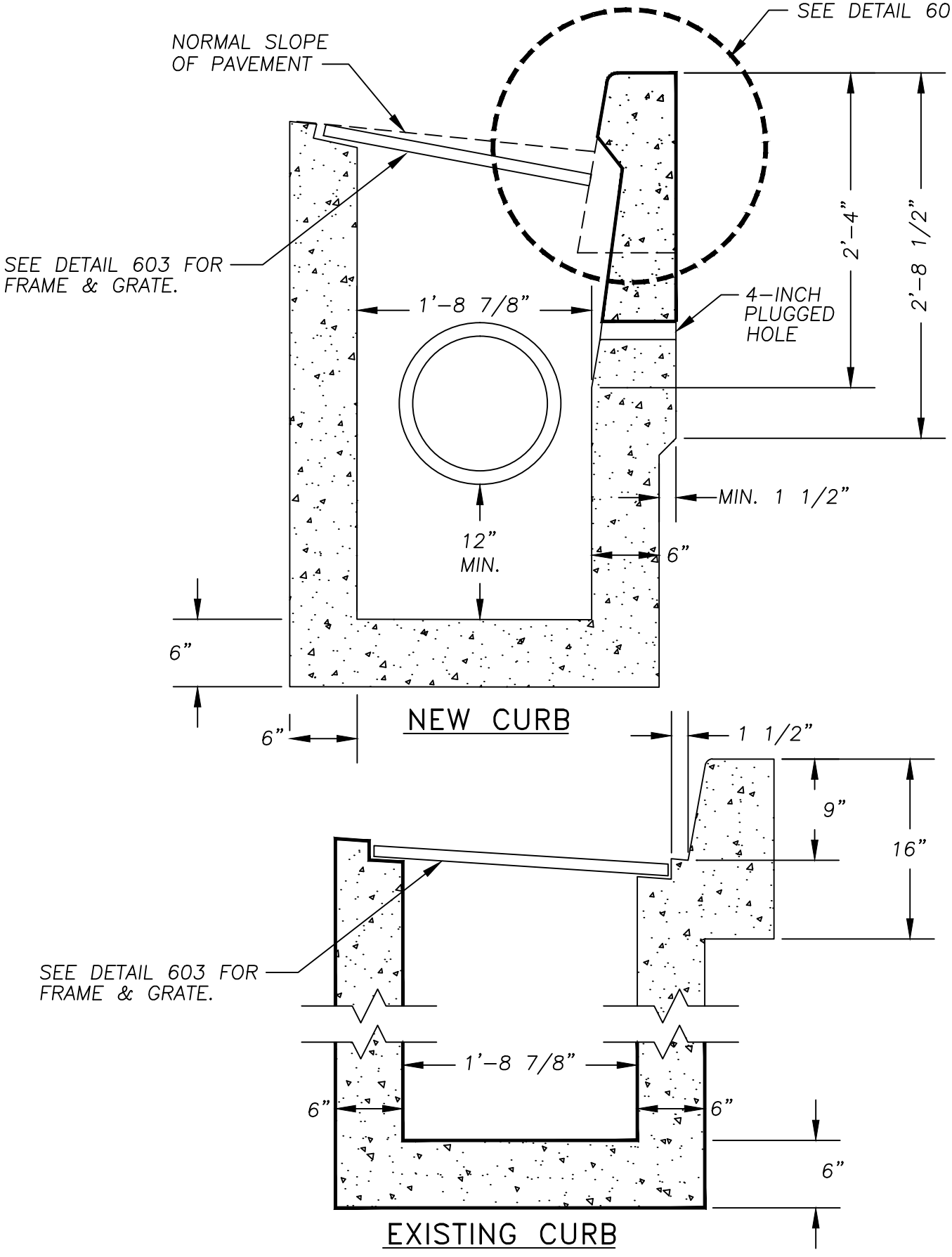


PLAN



SECTION A–A
ELEVATION

DRAWN	DRAWN	COMMUNITY DEVELOPMENT CITY OF SCAPPOOSE 34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON CATCH BASIN	SCALE N.T.S.
DIV.	STORMWATER		DATE 2002
REV.	DATE / APPR.		APPR.
REV	REV–DATE		DWG. NO. 601–A

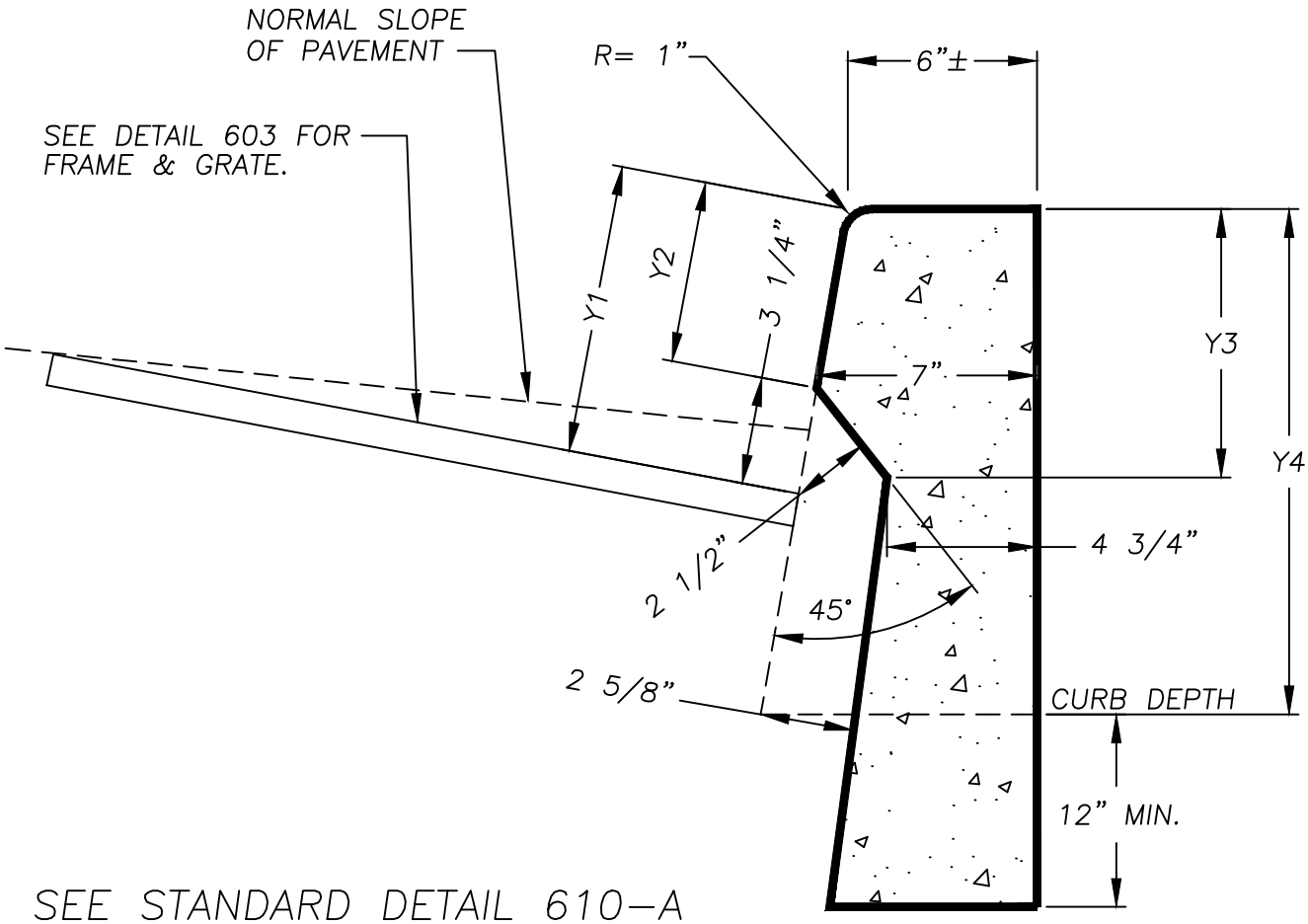


DRAWN	DRAWN	
DIV.	STORMWATER	
REV.	DATE	APPR.
REV	REV–DATE	

COMMUNITY DEVELOPMENT
CITY OF SCAPPOOSE
34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON

CATCH BASIN SECTION AND CURB DETAIL

SCALE	N.T.S.
DATE	2002
APPR.	
DWG. NO.	601B



SEE STANDARD DETAIL 610-A
FOR REINFORCEMENT DETAILS

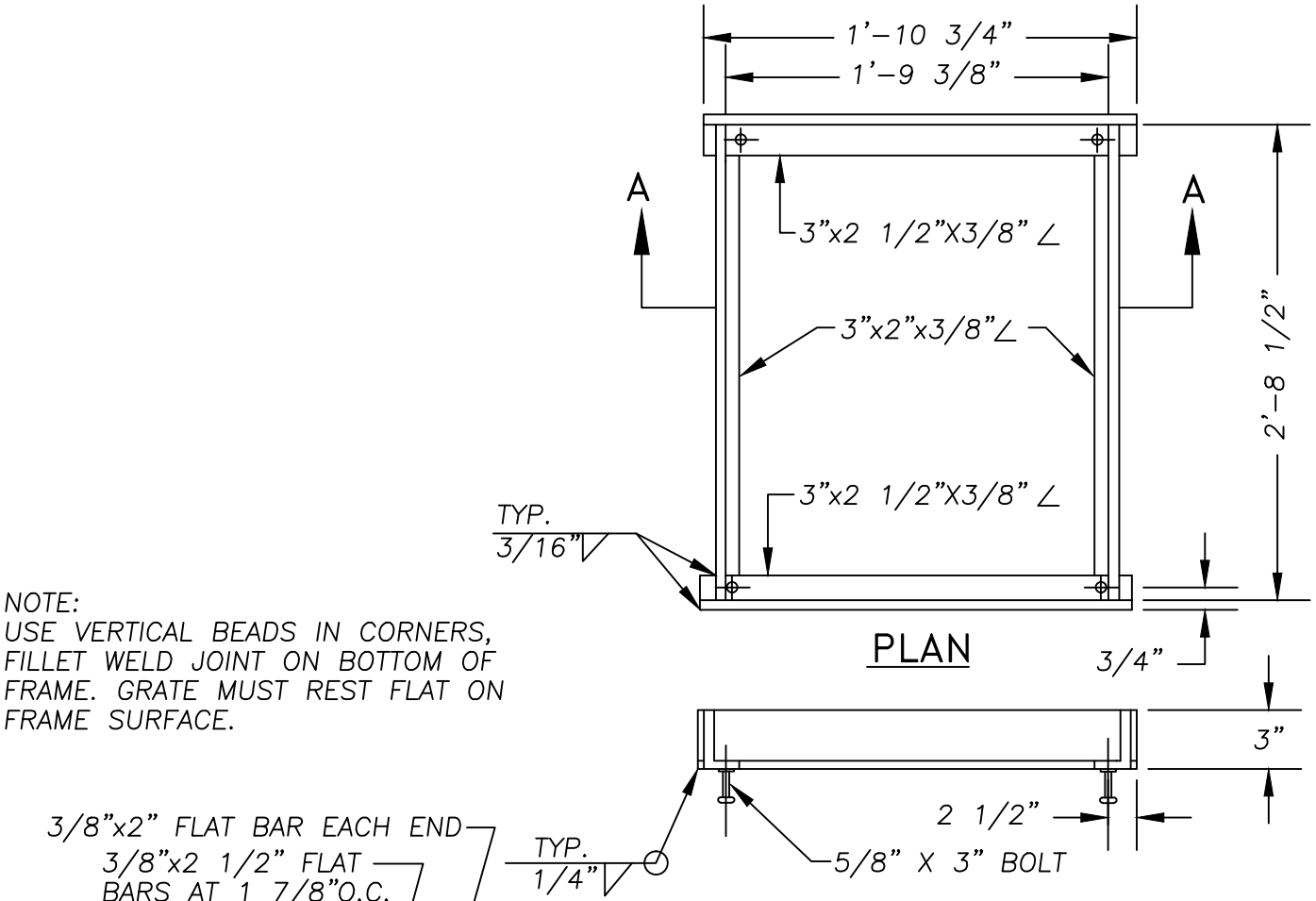
TABLE 601-C	CURB TYPE	
	TYPE "C"	MONOLITHIC
Y1	9"	8"
Y2	5 3/4"±	4 3/4"±
Y3	8 1/2"	7 1/2"
Y4	16"	12"

DRAWN	DRAWN	
DIV.	STORMWATER	
REV.	DATE	APPR.
REV	REV-DATE	

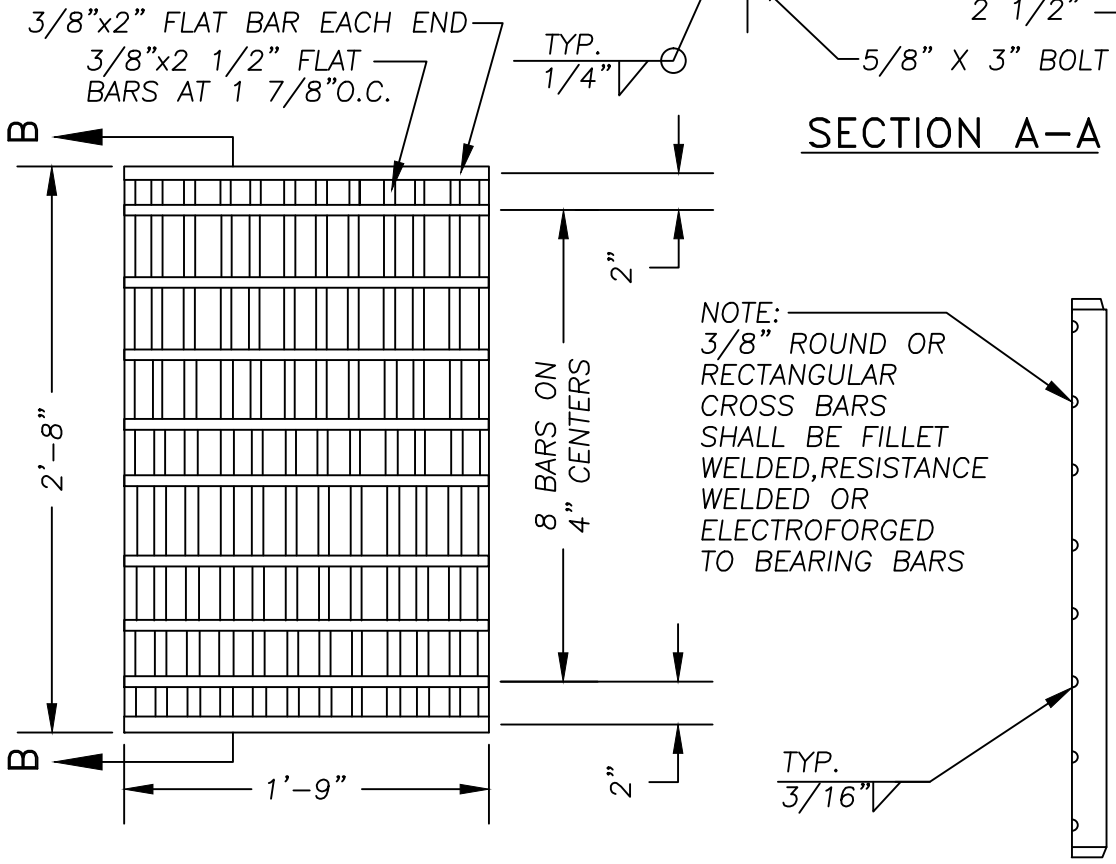
COMMUNITY DEVELOPMENT
CITY OF SCAPPOOSE
34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON

CURB DETAIL AT CATCH BASIN

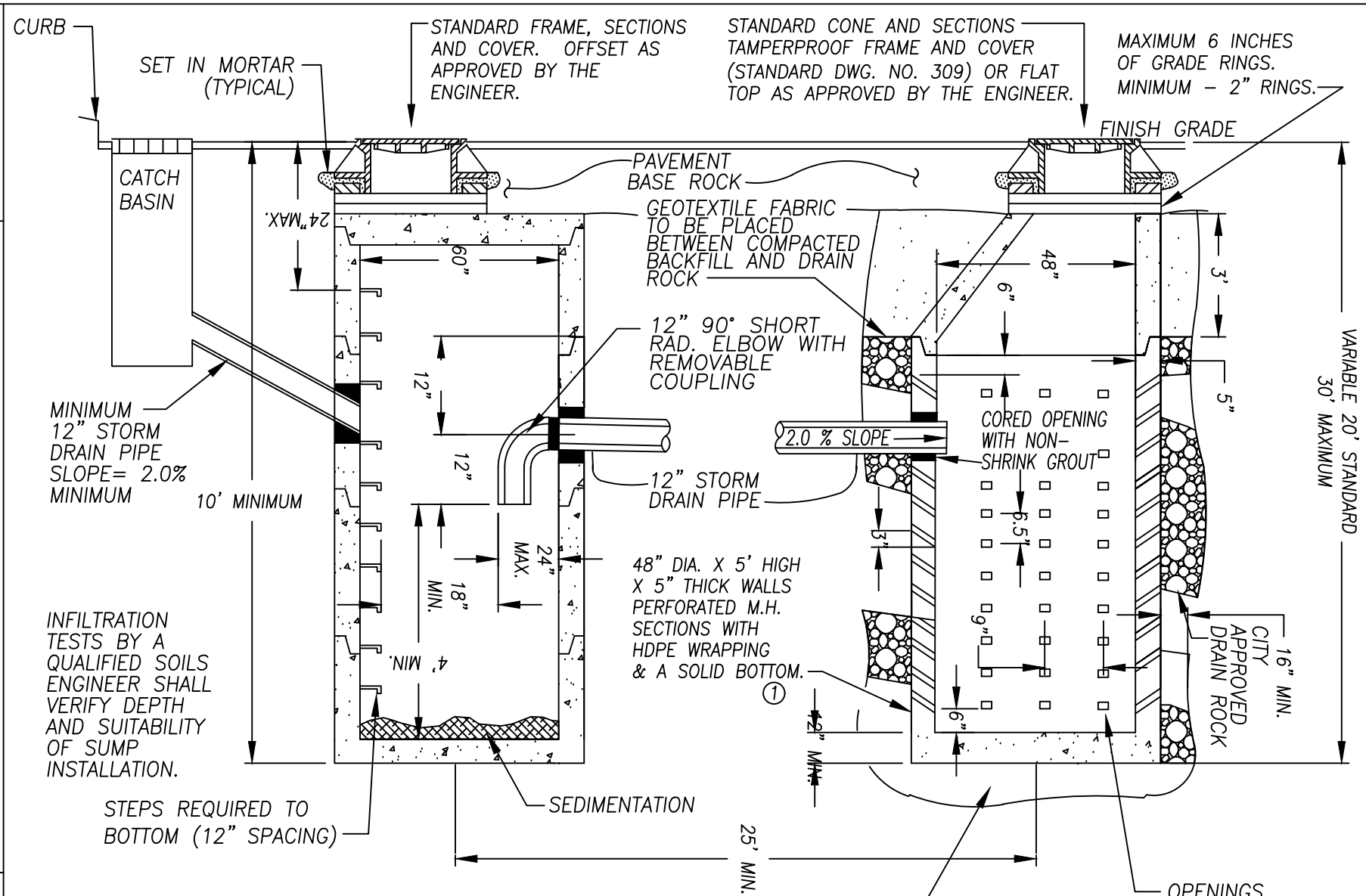
SCALE	N.T.S.
DATE	2002
APPR.	
DWG. NO.	601C



NOTE:
USE VERTICAL BEADS IN CORNERS, FILLET WELD JOINT ON BOTTOM OF FRAME. GRATE MUST REST FLAT ON FRAME SURFACE.



DRAWN	DRAWN		COMMUNITY DEVELOPMENT CITY OF SCAPPOOSE 34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON FRAME AND GRATE	SCALE N.T.S.
DIV.	STORMWATER			DATE 2002
REV.	DATE	APPR.		APPR.
REV	REV-DATE			DWG. NO. 603



12" 90° SHORT RADIUS ELBOW PER ASTM D-1248, SDR 26 HDPE
NOTE: CITY ENGINEER MAY REQUIRE ADDITIONAL PROTECTIVE MEASURES AS NEEDED

ALL PIPE TO SEDIMENTATION M.H. & PRECAST SUMP SHALL HAVE CLASS "B" BEDDING & PIPE ZONE MATERIAL.

UNDISTURBED NATIVE MATERIAL, OR 1"-0" COMPACTED CRUSHED ROCK (6" MIN. DEPTH) AS APPROVED BY THE ENGINEER

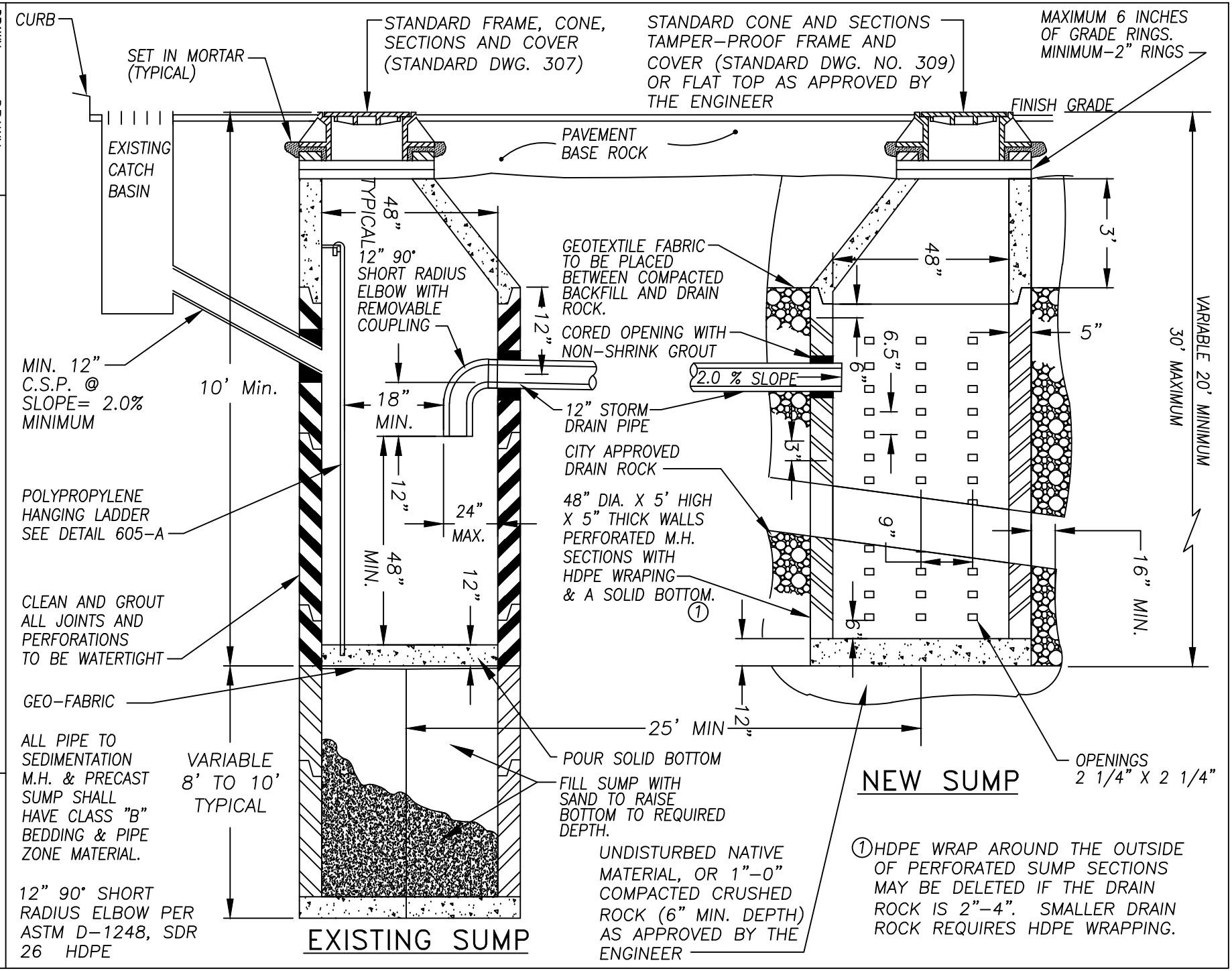
① HDPE WRAP AROUND THE OUTSIDE OF THE PERFORATED SUMP SECTIONS MAY BE DELETED IF THE DRAIN ROCK IS 2"-4" . SMALLER DRAIN ROCK REQUIRES HDPE WRAPPING.

DRAWN
DIV. STORMWATER
REV. DATE APPR.
REV REV-DATE

COMMUNITY DEVELOPMENT
CITY OF SCAPPOOSE
34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON

STORM SUMP SYSTEM

SCALE N.T.S.
DATE 2002
APPR.
DWG. NO. 604

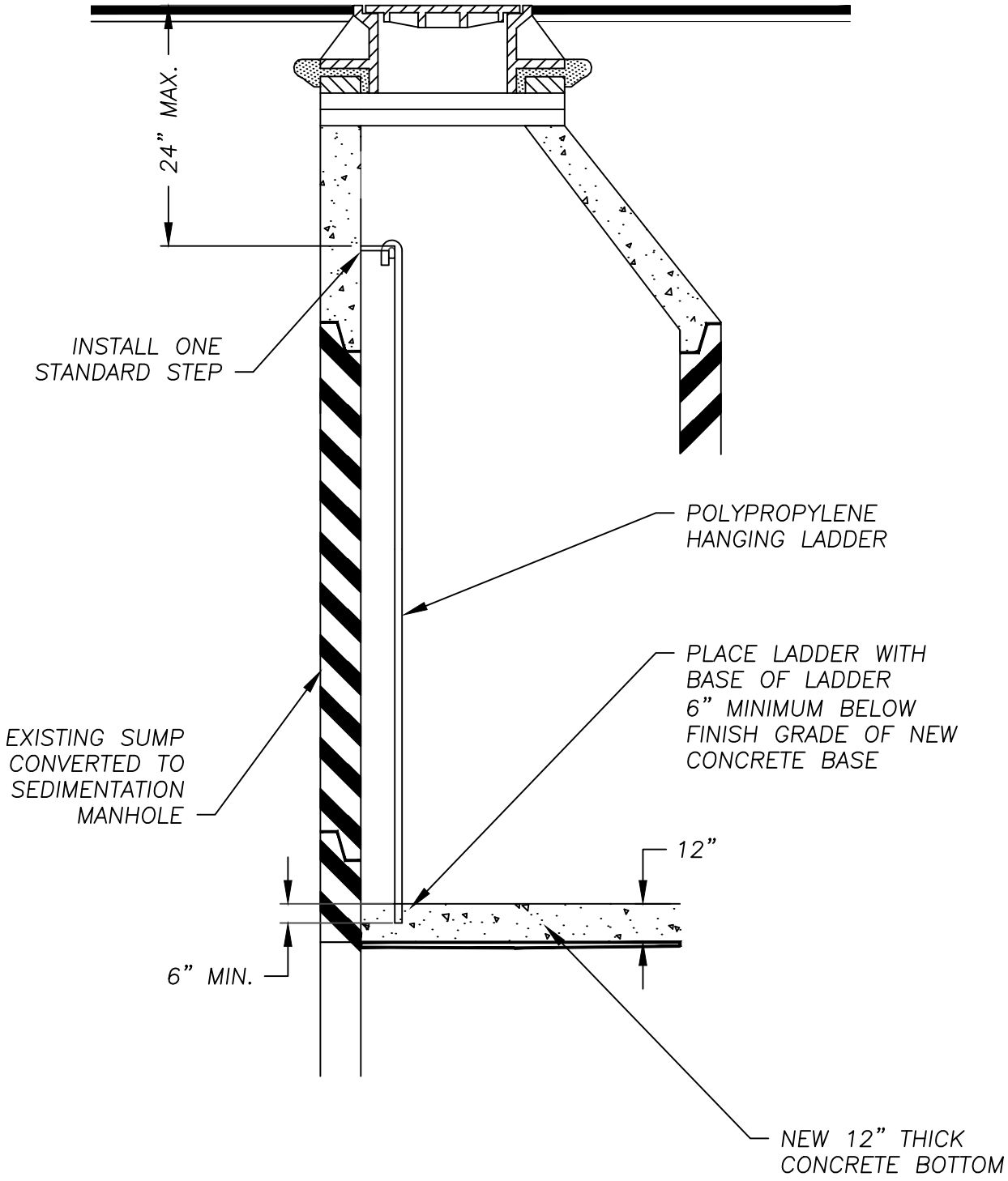


DRAWN
DIV. STORMWATER
REV. DATE APPR.
REV REV-DATE

COMMUNITY DEVELOPMENT
CITY OF SCAPPOOSE
34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON

STORM SUMP SYSTEM AND SEDIMENTATION MANHOLE (TYPICAL RETROFIT INSTALLATION)

SCALE N.T.S.
DATE 2002
APPR.
DWG. NO. 605



DRAWN	DRAWN	
DIV.	STORMWATER	
REV.	DATE	APPR.
REV	REV–DATE	

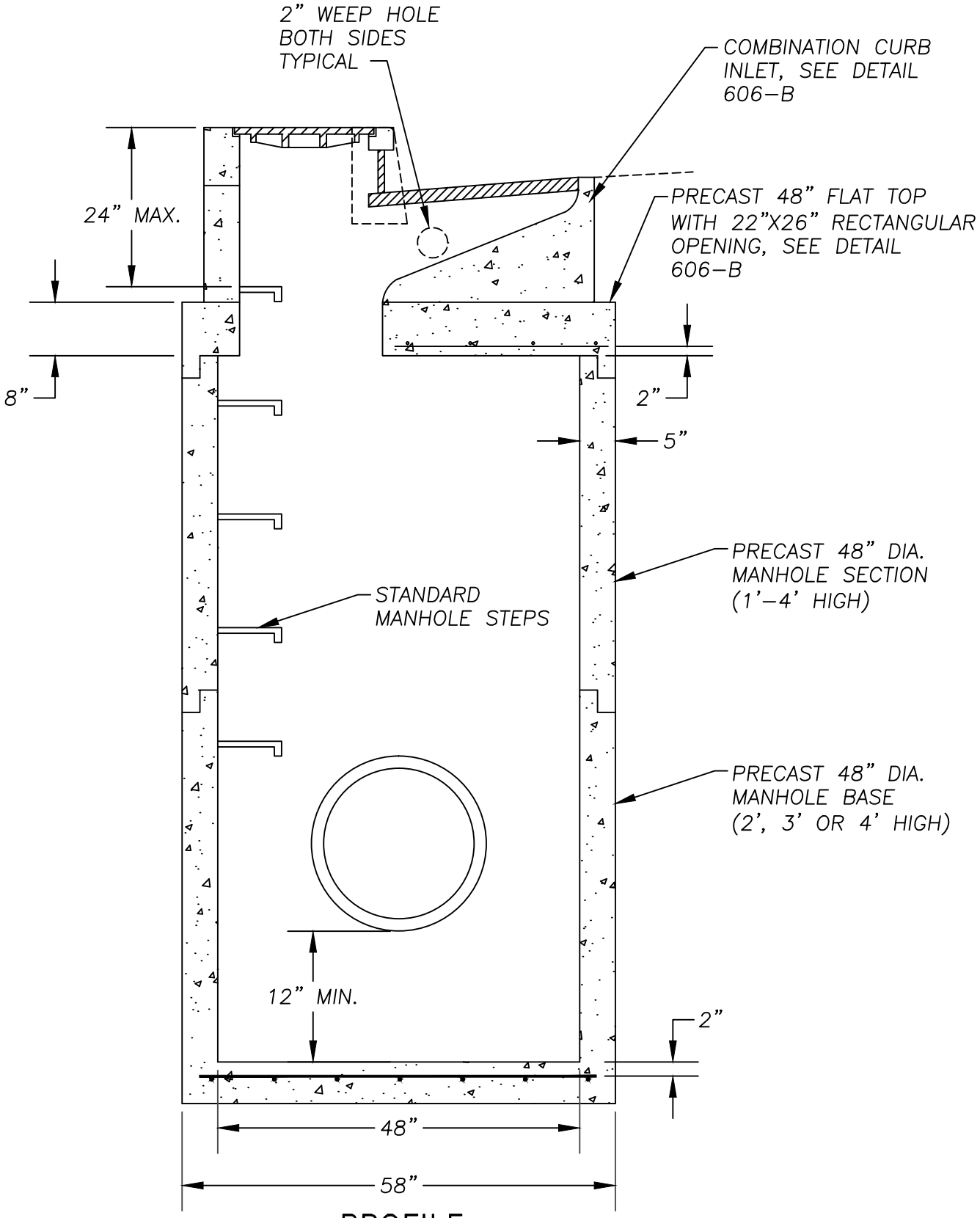
COMMUNITY DEVELOPMENT

CITY OF SCAPPOOSE

34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON

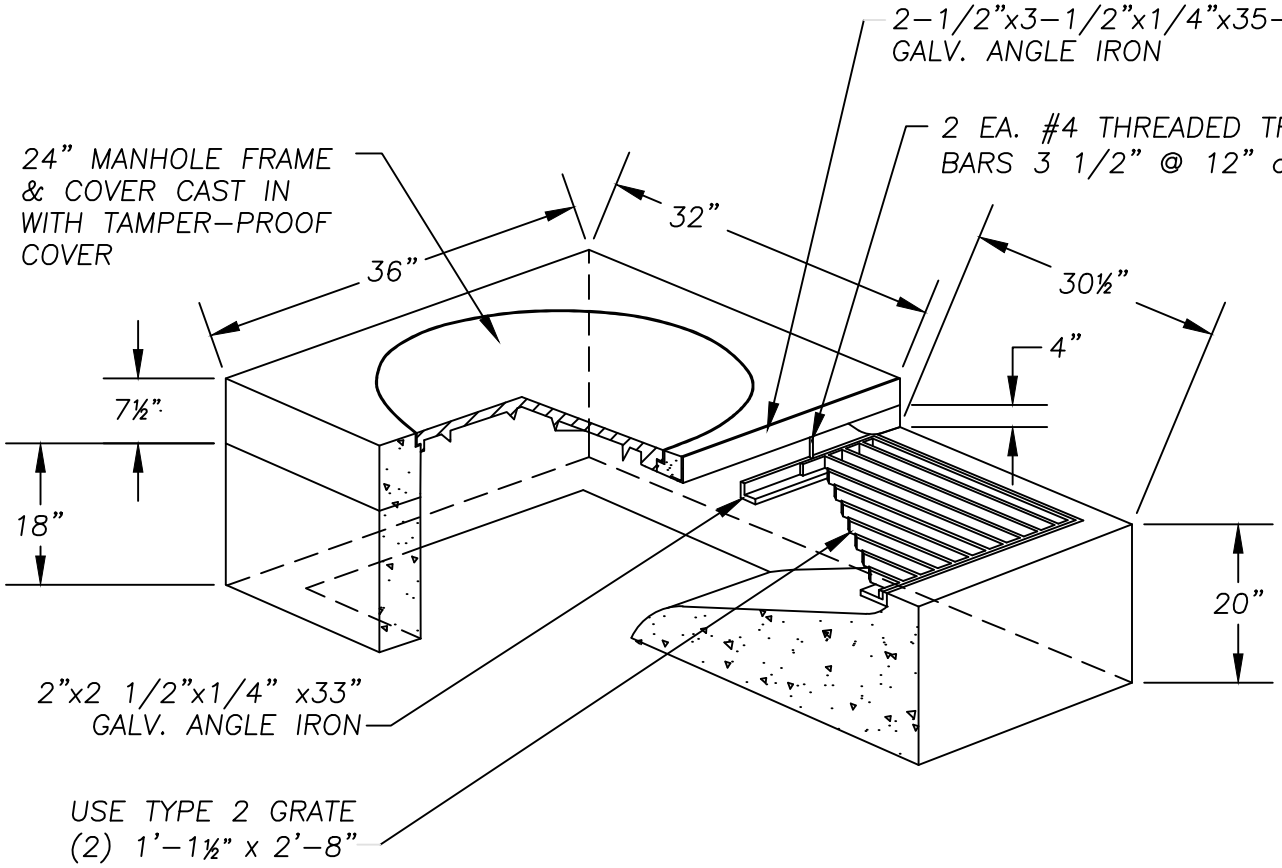
POLYPROPYLENE HANGING LADDER

SCALE	N.T.S.
DATE	2002
APPR.	
DWG. NO.	605A

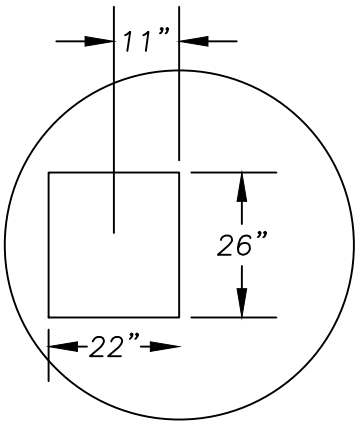


PROFILE

DRAWN	DRAWN	COMMUNITY DEVELOPMENT CITY OF SCAPPOOSE 34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON INLET–MANHOLE STANDARD	SCALE N.T.S.
DIV.	STORMWATER		DATE 2002
REV.	DATE / APPR.		APPR.
REV	REV–DATE		DWG. NO. 606A



COMBINATION CURB INLET

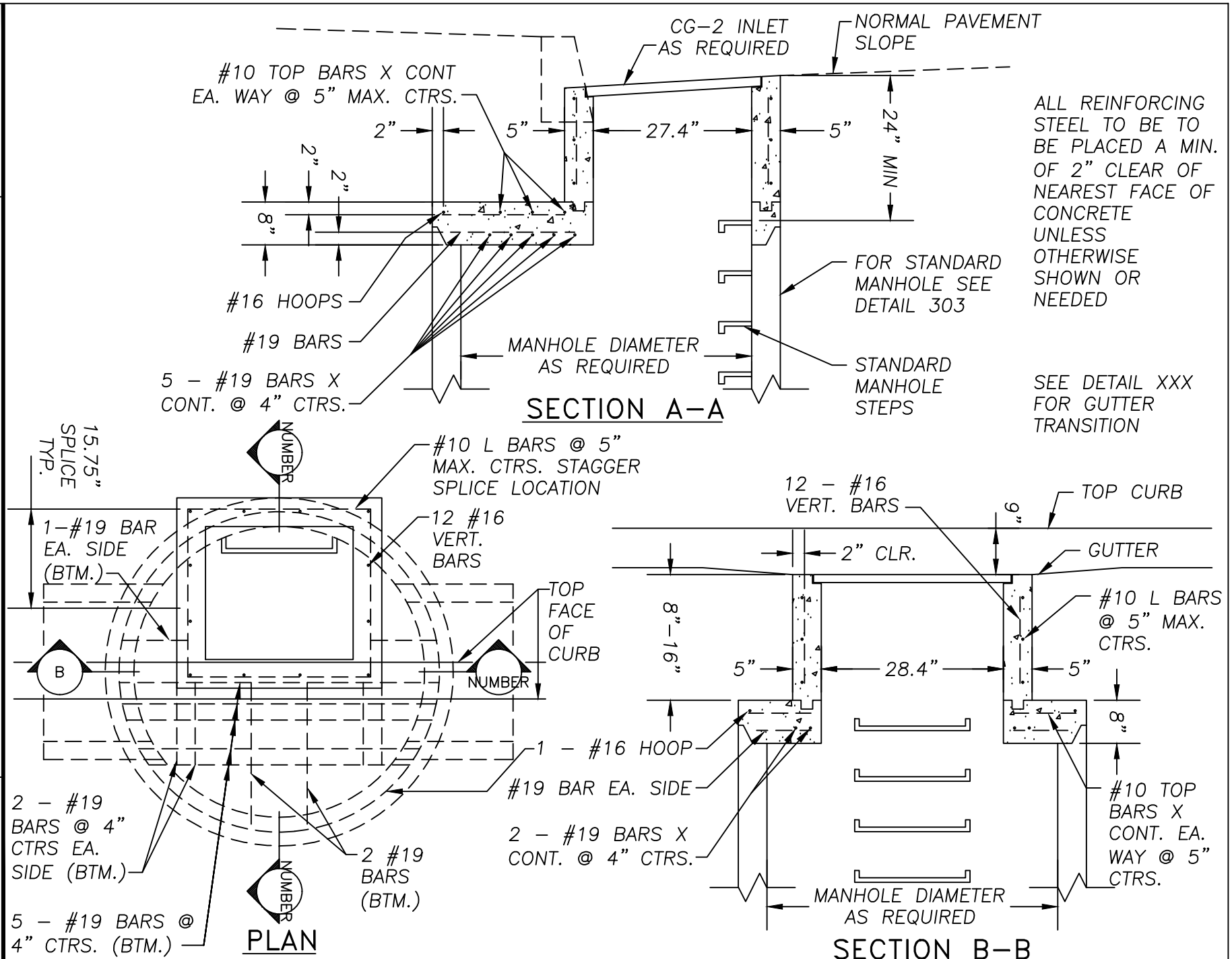


OFFSET RECTANGULAR TOP SLAB

NOTES:

1. REINFORCING FOR INLET UNIT 3 EA. #4 HORIZONTAL BARS.
2. REINFORCING FOR TOP UNIT 2 EA. #3 HORIZONTAL BARS.
3. REINFORCING FOR INLET SLOPED BASE, 4" X 4" MESH.
4. GUTTER IS TAPERED DOWN TO GRATE INLET.
5. TOP SLAB REINFORCING
   - #4 DEFORMED REBAR AROUND OPENING.
   - DIAGONALLY ON BOTH SIDES OF OPENING @ 6" O.C. IN BOTH DIRECTIONS.

DRAWN	DRAWN		COMMUNITY DEVELOPMENT CITY OF SCAPPOOSE 34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON	SCALE N.T.S.
DIV.	STORMWATER			DATE 2002
REV.	DATE	APPR.		APPR.
REV	REV–DATE		INLET–MANHOLE COMBINATION CURB INLET	DWG. NO. 606B

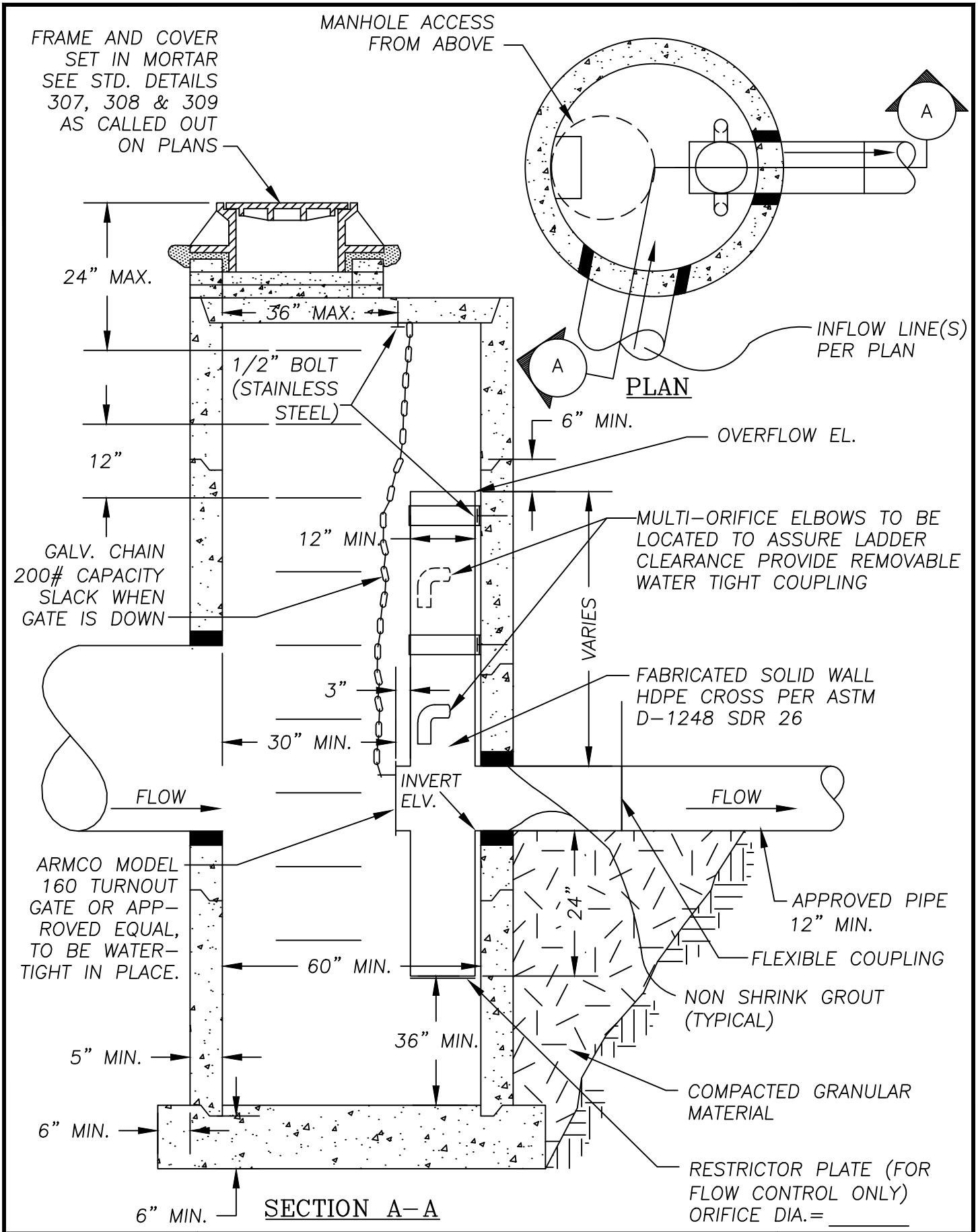


DRAWN
DIV. STORMWATER
REV. DATE APPR.
REV REV–DATE

COMMUNITY DEVELOPMENT
CITY OF SCAPPOOSE
34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON

INLET–MANHOLE ALTERNATE TOP

SCALE N.T.S.
DATE 2002
APPR.
DWG. NO. 6060

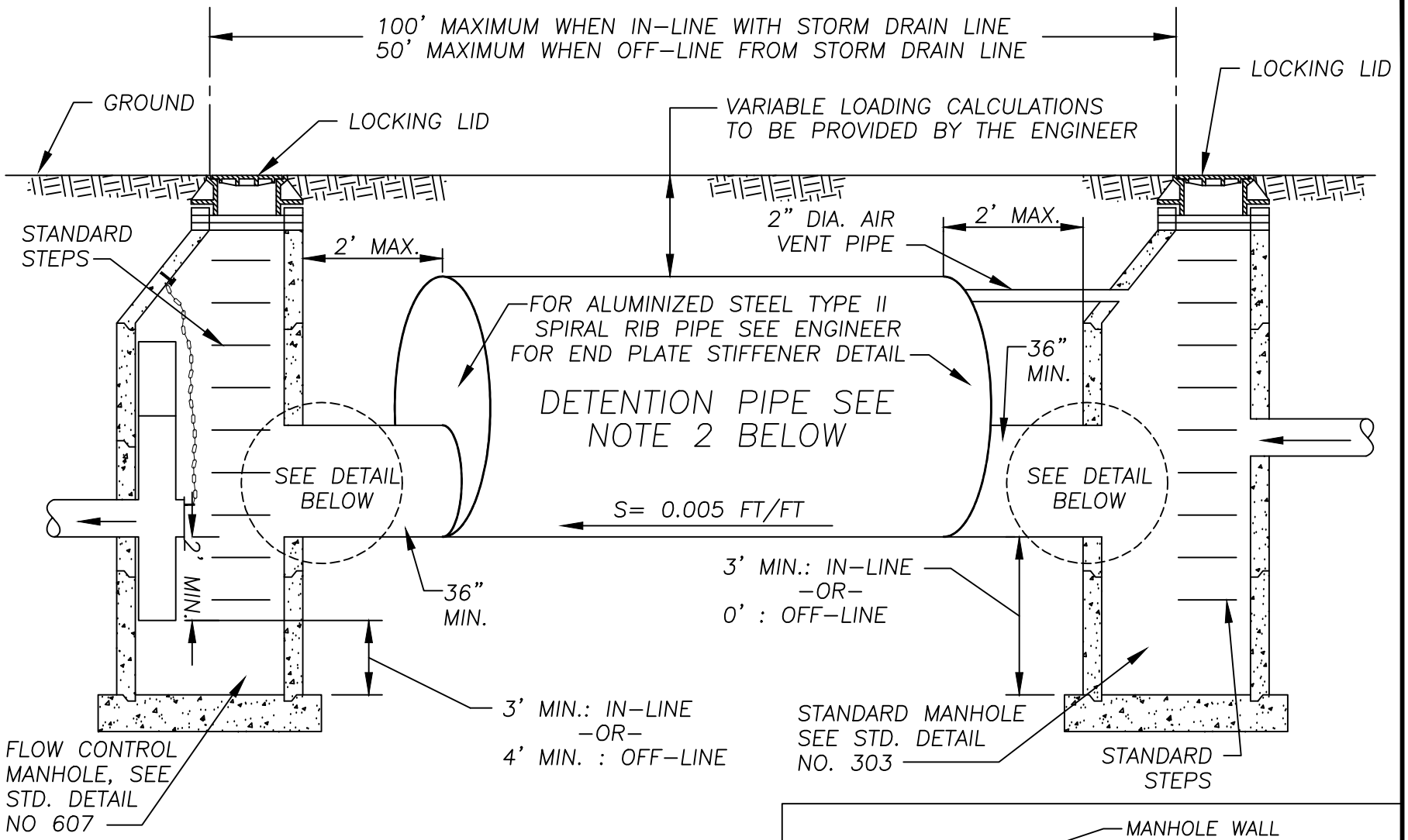


DRAWN	DRAWN	
DIV.	STORMWATER	
REV.	DATE	APPR.
REV	REV-DATE	

COMMUNITY DEVELOPMENT
CITY OF SCAPPOOSE
34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON

FLOW CONTROL MANHOLE

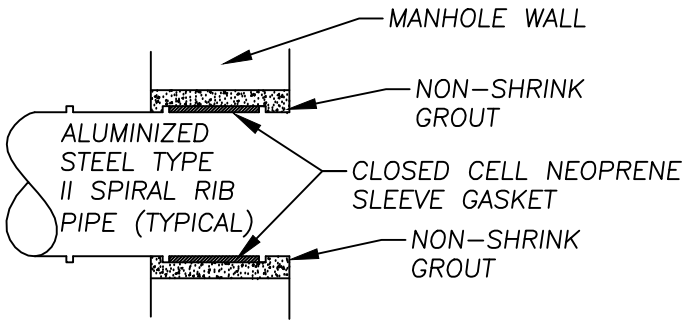
SCALE	N.T.S.
DATE	2002
APPR.	
DWG. NO.	607



NOTES:

1. THIS DETAIL REPRESENTS A DESIGN CONCEPT. FINAL DESIGN MAY VARY DEPENDING ON SITE CONDITIONS AND SHALL BE APPROVED BY THE CITY ENGINEER.

2. DETENTION PIPE TO BE MADE WATERTIGHT.



CONNECTION DETAIL

DRAWN
DIV. STORMWATER
REV. DATE APPR.
REV REV-DATE

COMMUNITY DEVELOPMENT
CITY OF SCAPPOOSE
34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON

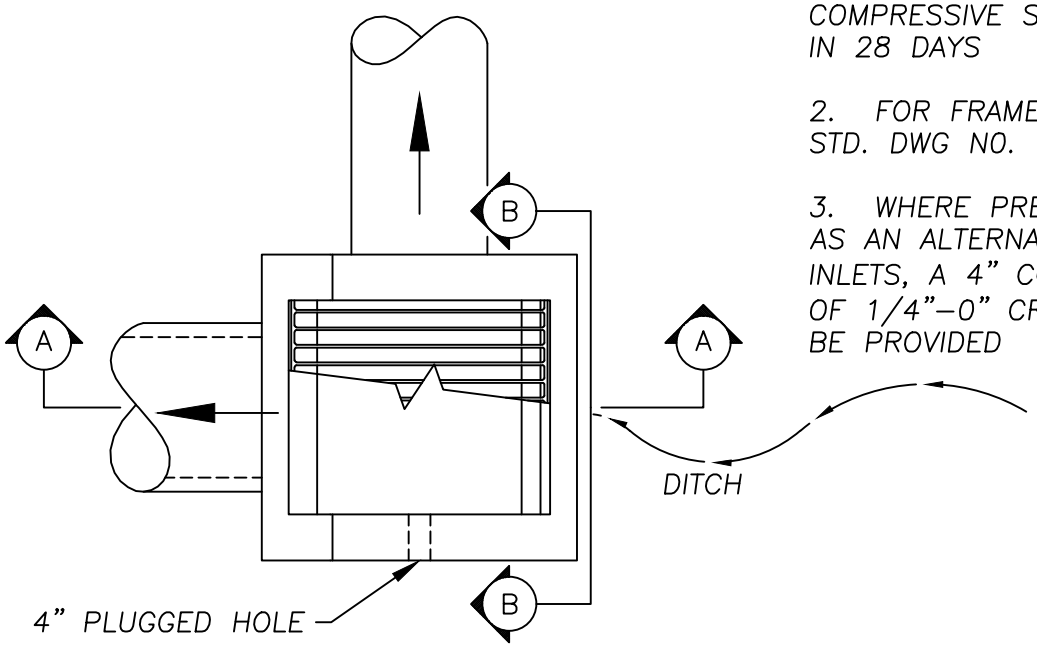
DETENTION PIPE TYPICAL CLOSED

SCALE N.T.S.
DATE 2002
APPR.
DWG. NO. 608

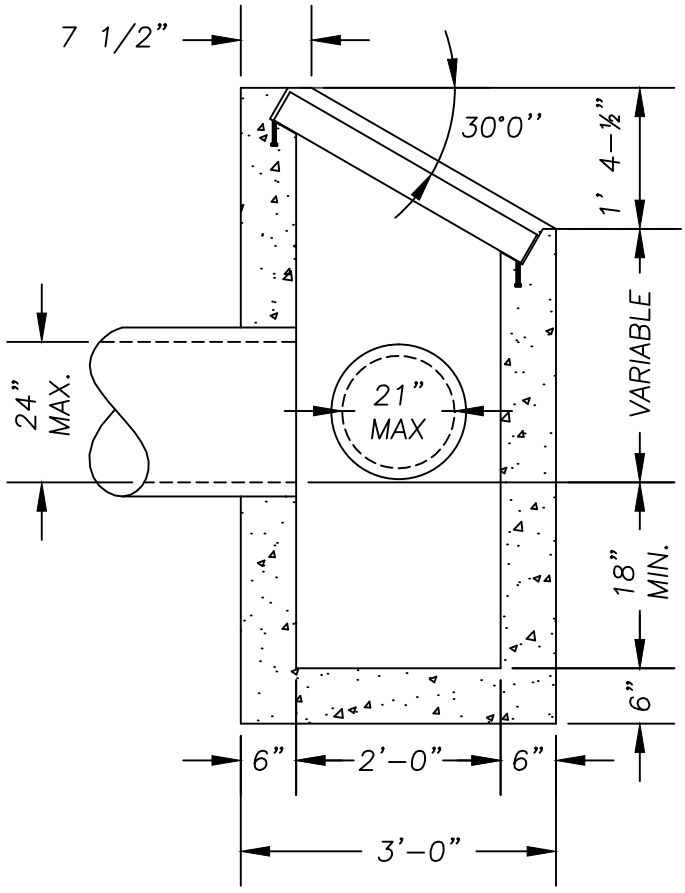
1. CONCRETE SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 3000 P.S.I. IN 28 DAYS

2. FOR FRAME & GRATE DETAIL SEE STD. DWG NO. 609–A

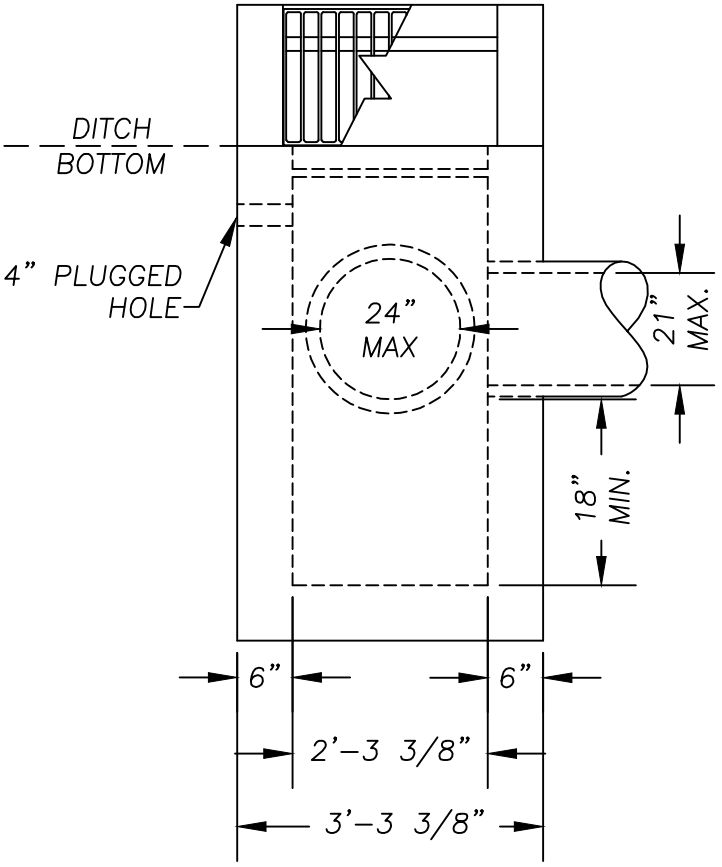
3. WHERE PRECAST INLETS ARE USED AS AN ALTERNATIVE TO CAST IN PLACE INLETS, A 4" COMPACTED LEVELING BED OF 1/4"–0" CRUSHED AGGREGATE SHALL BE PROVIDED



PLAN

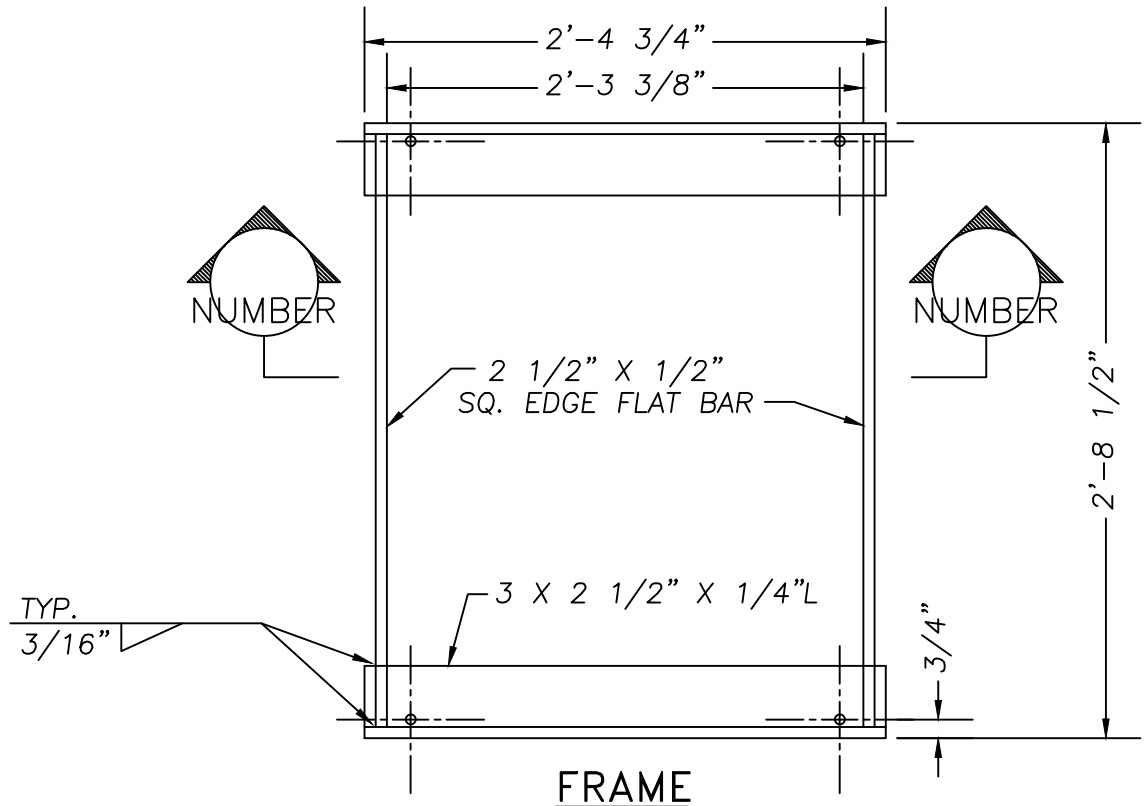


SECTION A–A

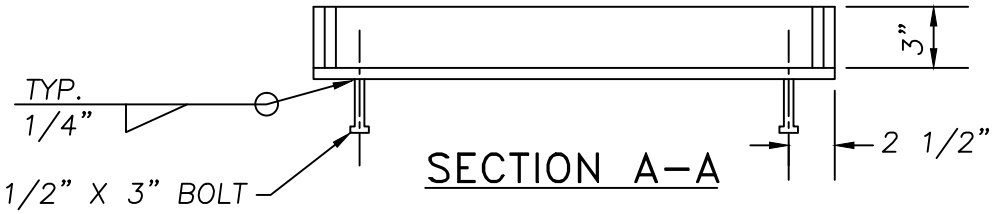


SECTION B–B

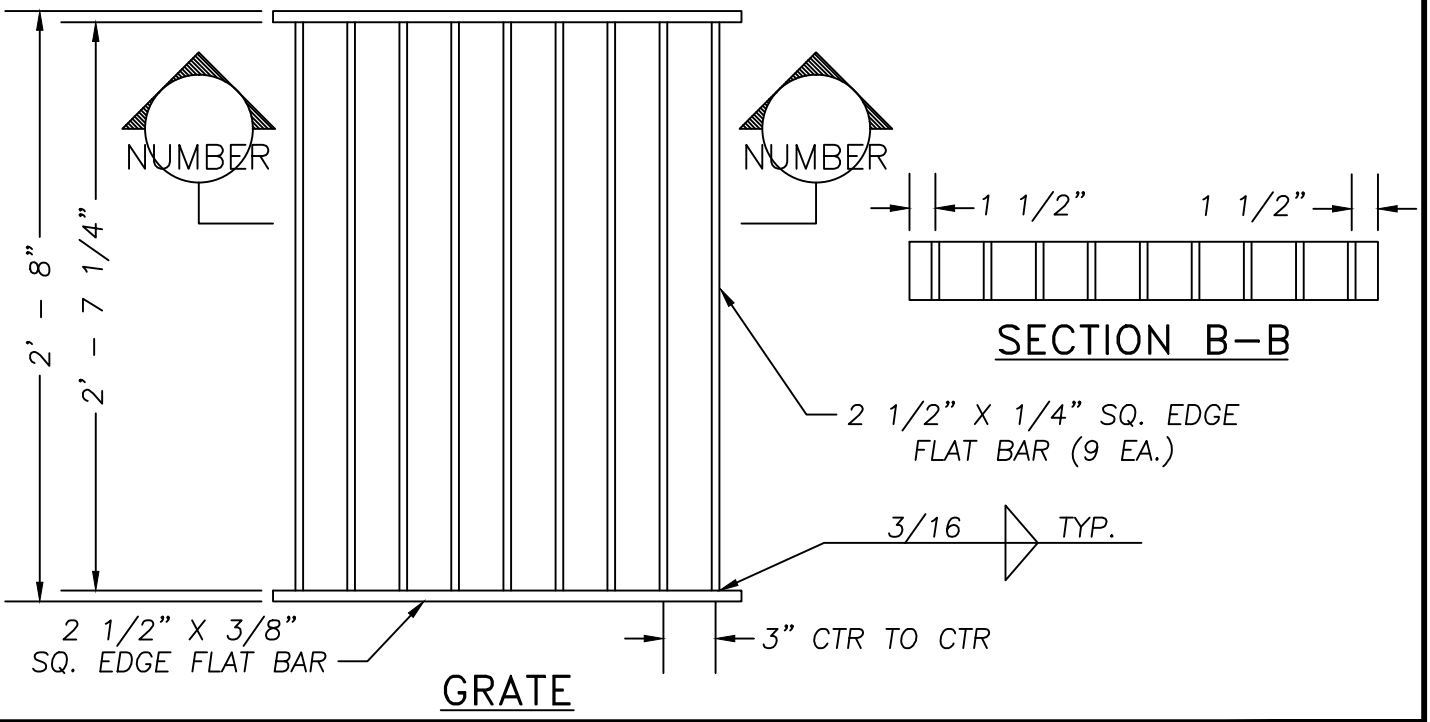
DRAWN	DRAWN		COMMUNITY DEVELOPMENT CITY OF SCAPPOOSE 34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON DITCH INLET TYPE D	SCALE N.T.S.
DIV.	STORMWATER			DATE 2002
REV.	DATE	APPR.		APPR.
REV	REV–DATE			DWG. NO. 609



FRAME



SECTION A–A



SECTION B–B

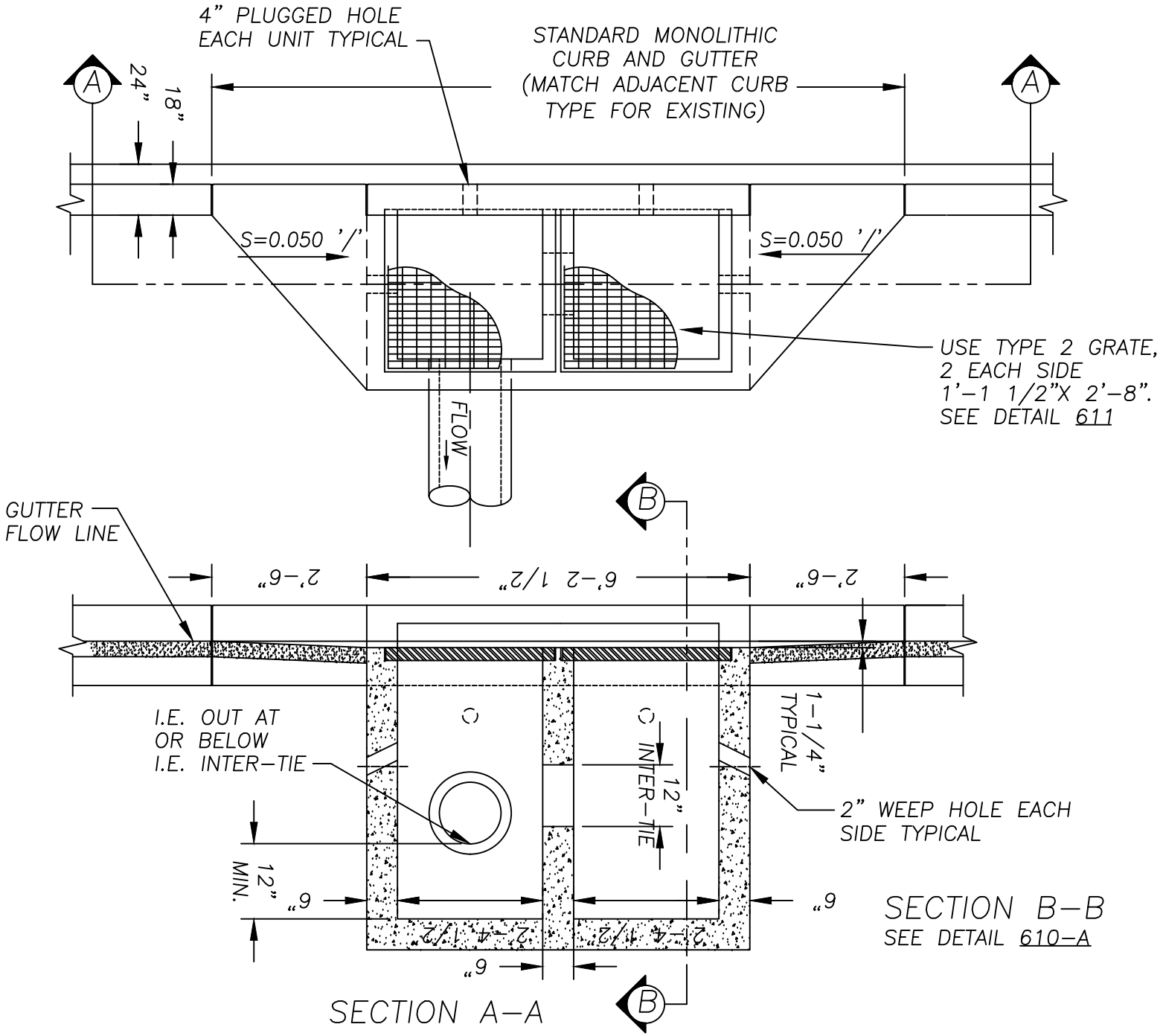
GRATE

DRAWN	DRAWN	
DIV.	STORMWATER	
REV.	DATE	APPR.
REV	REV–DATE	

COMMUNITY DEVELOPMENT
CITY OF SCAPPOOSE
34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON

DITCH INLET FRAME & GRATE

SCALE	N.T.S.
DATE	2002
APPR.	
DWG. NO.	609A

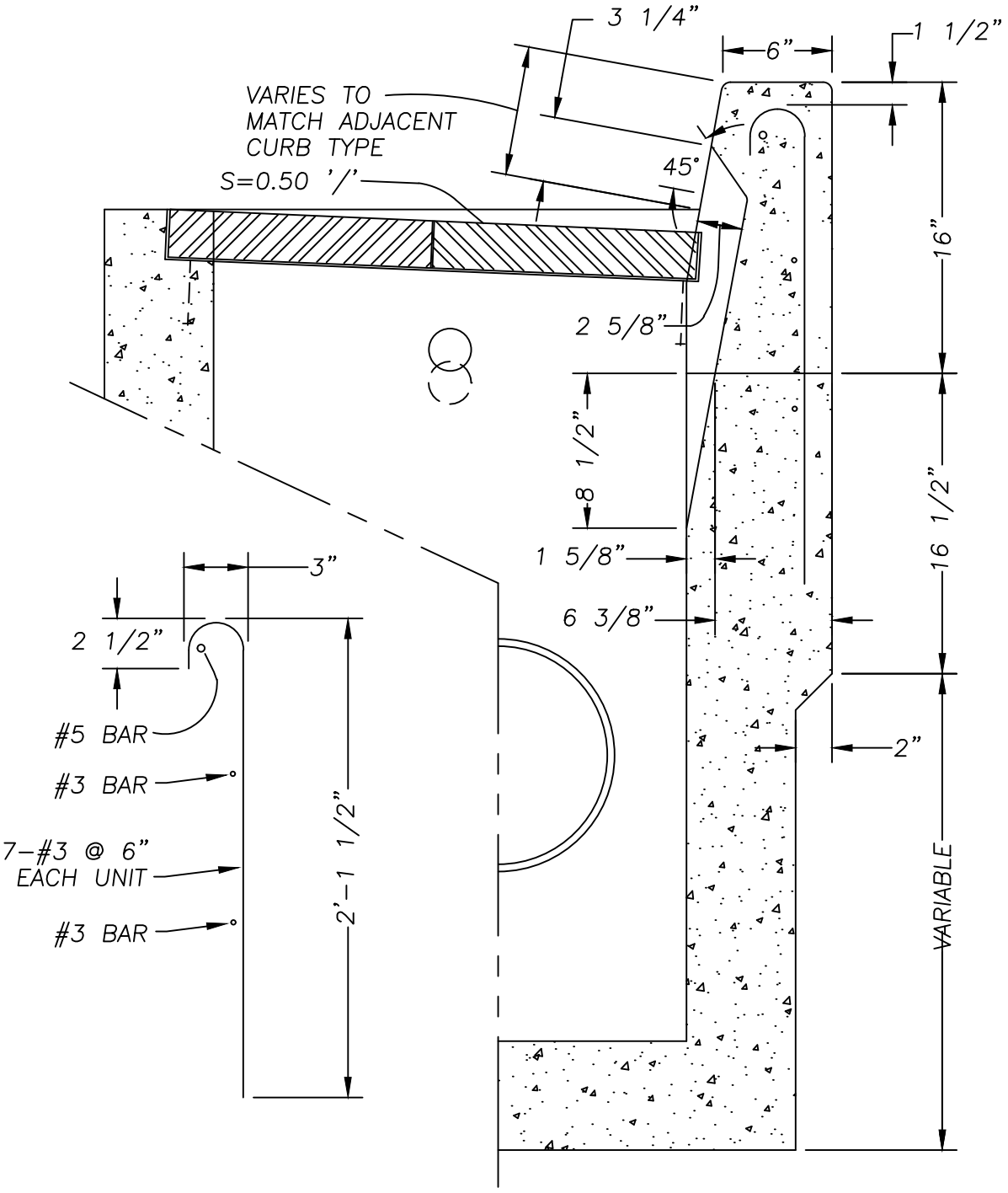


DRAWN
DIV.
DEPT
REV.
DATE
APPR.

COMMUNITY DEVELOPMENT
CITY OF SCAPPOOSE
34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON

CG-2 DOUBLE CATCH BASIN

SCALE N.T.S.
DATE 2002
APPR.
DWG. NO. 610



SECTION B-B

NOTES:

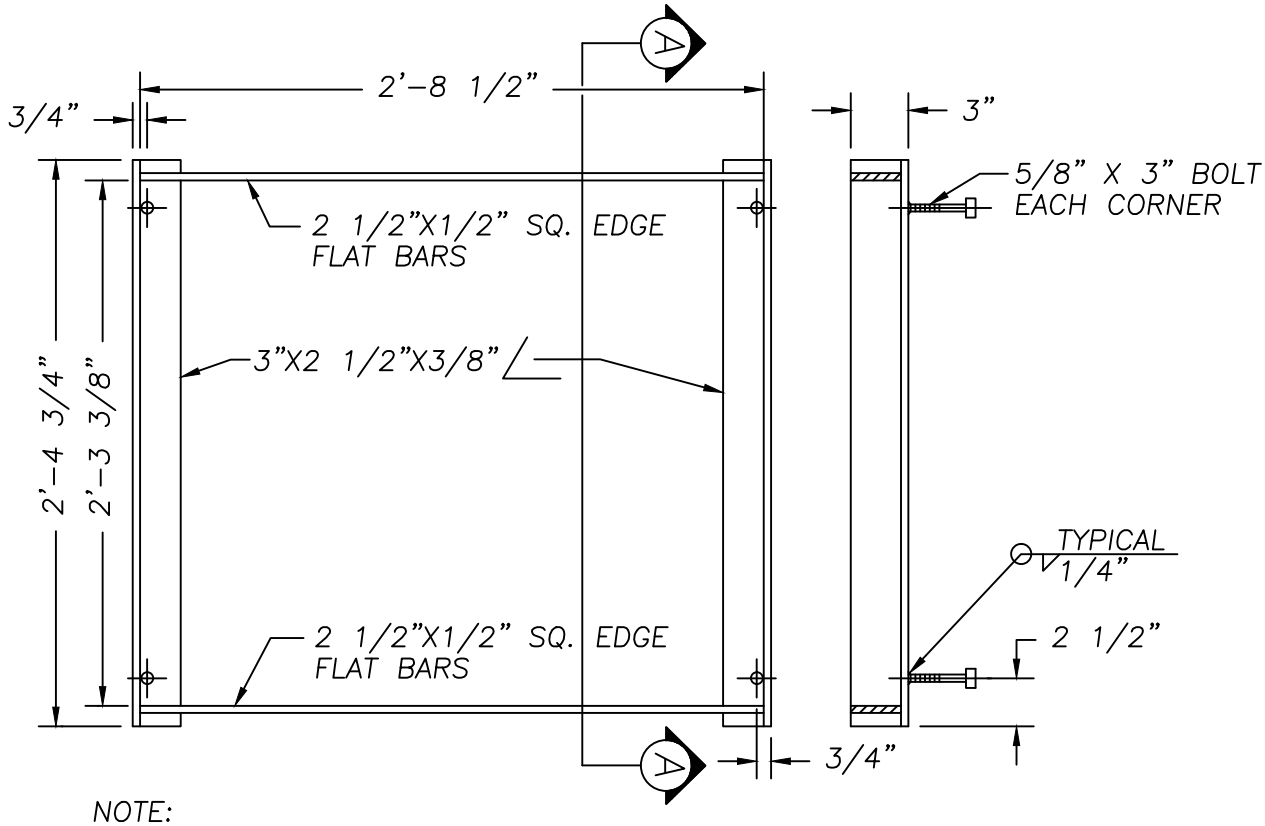
1. #3 BARS SHALL BE PLACED DURING CURB CONSTRUCTION.
2. ALL BARS SHALL BE PLACED 1 1/2" CLEAR OF NEAREST FACE OF CONCRETE UNLESS SHOWN OR OTHERWISE NOTED.
3. ALL BAR SPLICES LENGTHS SHALL BE A MIN. 20 DIA.
4. CLASS 3000 CONCRETE SHALL BE USED IN ALL INLETS.

DRAWN	DRAWN	
DIV.	DEPT	
REV.	DATE	APPR.

COMMUNITY DEVELOPMENT
CITY OF SCAPPOOSE
34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON

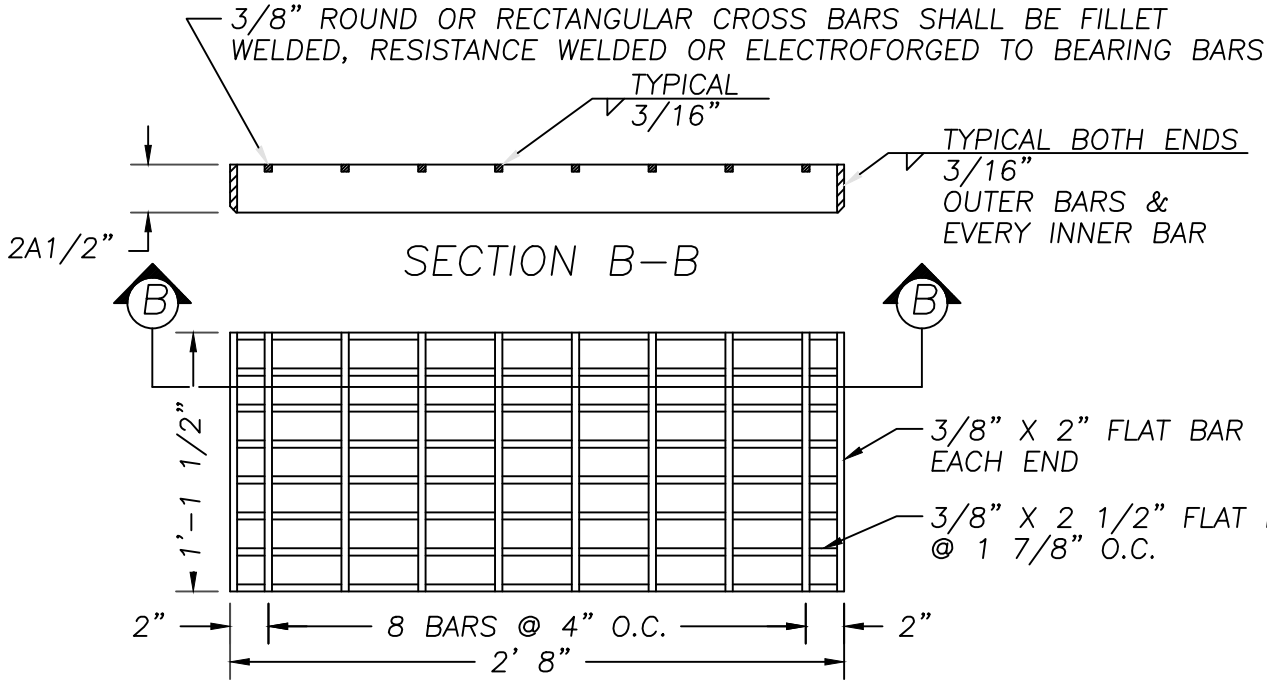
CG-2 DOUBLE CATCH BASIN CURB SECTION

SCALE	N.T.S.
DATE	2002
APPR.	
DWG. NO.	610A



NOTE:
USE VERTICAL BEADS IN CORNERS, FILLET WELD JOINT ON BOTTOM OF FRAME. GRATE MUST REST FLAT ON FRAME SURFACE.

PLAN (FRAME) SECTION A–A



PLAN (GRATE)
TYPE 2 GRATE

DRAWN	DRAWN	
DIV.	DEPT	
REV.	DATE	APPR.

COMMUNITY DEVELOPMENT
CITY OF SCAPPOOSE
34485 E. COLUMBIA AVE., PO BOX "P", SCAPPOOSE, OREGON
CG–2 FRAME AND GRATE

SCALE	N.T.S.
DATE	2002
APPR.	
DWG. NO.	611